

# MI00 Intercom & Nurse Call Catalogue



*Let's make things better.*



# M100 Intercom & Nurse Call Catalogue

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# M100 Intercom System

## Introduction

Modern, advanced communication systems are designed to simplify contact between individuals in business and industrial environments as well as in public service institutions and health care.

By doing so they help achieve greater efficiency and effectiveness in everyday operations.

They also contribute to higher standards of performance and security.

The resourceful way of achieving these aims... the flexible way... is investing in a Philips M100 Intercom System.

The efficient and versatile concept that not only provides the means for people to communicate but also the facilities to store and recall information when needed.

In addition, M100 provides the means for integration with other systems and equipment in the CSS product range to thereby achieve the optimum level of safety and security for any premises.

Whatever the installation... a large hospital or an industrial complex... a small office or local garage which may only need a couple of intercom stations... with Philips' M100 a tailor-made installation is assured to meet any demand - precisely.

Being a worldwide organization, Philips can draw upon market information from almost 100 countries across five continents. Highly specialized engineers in the



CSS Supply Centre, Oslo utilize this vast amount of user's knowledge.

This, combined with the advanced technological environment in Scandinavia, resulted in the development and production of leading internal communication systems.

For every project that you become involved in you can rest assured that our personnel are always there as your support - for

advice and help - whatever your requirements.

Philips' customer support does not stop with the supply of new equipment.

After-sales service embraces both professional engineering skills as well as sales of spare parts and customer backup.

### **Important:**

Illustrations in this catalogue show the products with or without different options. Options are not necessarily included in the type number for each product and will not automatically be delivered as part of the product. See description for each product and tables for accessories and kits.

### LBB 7089/10 Desktop master station



The desktop master station is designed for desktop use in office-like environments. The station cabinet is made in light grey ABS plastic for desk top or wall mounting.

Controls for volume adjustment, simplex mode, privacy and system functions.

+/- buttons for accepting and rejecting certain functions. A call tone and a pilot lamp indicate connection.

A handset may be connected to provide lowspeaking conversation.

### LBB 7089/15 Compact master station



The compact master station has the same functional use as the desktop master station but is intended for areas and applications where compactness is of importance and where there is a requirement for surface or flush mounting in desk or wall.

A handset with cradle may be connected for lowspeaking conversation.

A flush mount frame is available which enables the compact master station to be used in flush mount applications such as control desks and in walls.

<i>Technical data:</i>	<i>LBB 7089/10</i>	<i>LBB 7089/15</i>
<i>Dimensions (wxhxd) in mm/inch:</i>	164x75x212/6.5x3x8.3	93x65x224/3.7x2.6x8.8
<i>Weight, net, in kg/lb:</i>	0.530/1.2	0.360/0.8
<i>Environmental conditions, category:</i>	T1	T1
<i>IP code:</i>	40 (front access)	40 (front access)
<i>Approval:</i>	CE	CE
<i>Supply voltage :</i>	36 V d.c.	36 V d.c.
At the station, idle	<10 V d.c.	<10 V d.c.
At the station, in operation	18 - 36 V d.c.	18 - 36 V d.c.
<i>Current consumption</i>		
At the station, idle	<0.3 mA	<0.3 mA
At the station, in operation	25 - 38 mA	25 - 38 mA
<i>Output power (continuous/peak):</i>	90/300 mW	90/300 mW
<i>Cabling:</i>		
Extension line	2-wire	2-wire

## Standard stations

### LBB 7089/16 Compact master display station



The compact master display station is identical to the compact master station but also incorporates an LCD display.

This display has 2 lines of 16 characters each for visual display of functions, directory, called number and name, calling party identification and a number of other possibilities in selected languages.

The information displayed has a logical structure where call information is programmable.

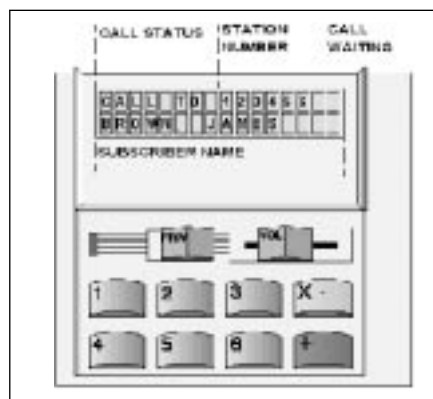
For special applications see relevant software chapter. For general applications the figure on right shows a typical display structure.

### LBB 7089/18 Compact master display station with back light



The station is identical to the compact master display station except that the display has a built-in back light for improved readability.

Extra back light power is needed when used with the S-16 exchange.



Technical data:	LBB 7089/16	LBB 7089/18
Dimensions (wxhxd) in mm/inch:	93x65x224/3.7x2.6x8.8	93x65x224/3.7x2.6x8.8
Weight, net, in kg/lb:	0.420/0.9	0.420/0.9
Environmental conditions, category:	T1	T1
IP code:	40 (front access)	40 (front access)
Approval:	CE	CE
Supply voltage :	36 V d.c.	36 V d.c.
At the station, idle	<10 V d.c.	<10 V d.c.
At the station, in operation	18 - 36 V d.c.	18 - 36 V d.c.
Power line	24 - 40 V d.c.	24 - 40 V d.c.
Current consumption		
At the station, idle	<0.3 mA	<0.3 mA
At the station, in operation	25 - 38 mA	25 - 38 mA
Output power (continuous/peak):	90/300 mW	90/300 mW
Cabling:		
Extension line	2-wire	2-wire

### LBB 7089/31 Single call station



The single call station is housed in a light grey ABS plastic cabinet for desktop or wall mounting and intended for indoor use. Ideal for use at doors or in lifts. The station can be used in connection with a CCTV camera system for remote observation. Kits are available for increased output power and/or remote door opening. They must be powered separately. In operation the station allows for loudspeaking and handsfree conversation. By pressing the call button outgoing calls are made to one pre-programmed location. If the call is in indirect mode it has to be accepted by the receiver before normal duplex conversation can be established. If an outgoing call is not answered within a pre-programmed time-frame, the call will automatically be reset. Any station in the system can reach the single call station by keying the station's extension number.

### LBB 7089/32 Dual call station



The dual call station is identical to the single call station with the exception of the keypad which is replaced by two call buttons and a call cancel button. This means that the dual call station has the possibility to call two different pre-programmed locations in direct or indirect mode.

A call or call request can be terminated by pressing the cancel key on the station or, if not used, automatically after a pre-set time-frame.

<i>Technical data:</i>	<i>LBB 7089/31</i>	<i>LBB 7089/32</i>
<i>Dimensions (wxhxd) in mm/inch:</i>	95x65x224/3.7x2.6x8.8	93x65x224/3.7x2.6x8.8
<i>Weight, net, in kg/lb:</i>	0.330/0.7	0.330/0.7
<i>Environmental conditions, category:</i>	T1	T1
<i>IP code:</i>	40 (front access)	40 (front access)
<i>Approval:</i>	CE	CE
<i>Supply voltage :</i>	36 V d.c.	36 V d.c.
At the station, idle	<10 V d.c.	<10 V d.c.
At the station, in operation	18 - 36 V d.c.	18 - 36 V d.c.
<i>Current consumption</i>		
At the station, idle	<0.3 mA	<0.3 mA
At the station, in operation	25 - 38 mA	25 - 38 mA
<i>Output power (continuous/peak):</i>	90/300 mW	90/300 mW
<i>Cabling:</i>		
Extension line	2-wire	2-wire

# Industrial stations

## LBB 7089/20 Industrial master station



The industrial master station is designed for use in light industrial environments where there is a demand for flush or on wall mounting. If the latter is required, an optional on-wall back box is necessary.

The station is delivered as a flush mount unit with a die-cast zink alloy front, lacquered in grey. It has a built-in directory list and a splash-proof membrane keypad.

Controls for simplex mode and system functions, as well as +/- buttons for accepting and rejecting certain functions. The volume and privacy is internally pre-set in each station. A call tone and a pilot lamp indicate connection.

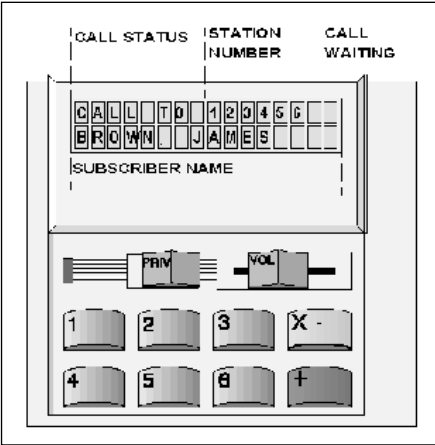
## LBB 7089/30 Industrial master display station with back light



The industrial master display station is identical to the industrial master station but also incorporates an LCD display with a back light for improved readability.

This display has 2 lines of 16 characters each for visual display of functions, directory, called number and name, calling party identification and a number of other user-friendly features.

The information displayed has a logical structure where call information is programmable. For special applications see relevant software chapter.



For general applications the figure above shows a typical display structure.

Extra back light power is needed when used with the S-16 exchange.

Technical data:	LBB 7089/20	LBB 7089/30
Dimensions (wxhxd) in mm/inch:	130x265x75/5.1x10.4x3	130x265x75/5.1x10.4x3
Weight, net, in kg/lb:	1.4/3	1.4/3
Environmental conditions, category:	T1	T1
IP code:	40 (front access)	40 (front access)
Approval:	CE	CE
Supply voltage :	36 V d.c.	36 V d.c.
At the station, idle	<10 V d.c.	<10 V d.c.
At the station, in operation	18 - 36 V d.c.	18 - 36 V d.c.
Power line		20 - 40 V d.c.
Current consumption:		
At the station, idle	<0.3 mA	<0.3 mA
At the station, in operation	25 - 38 mA	25 - 38 mA
Output power (continuous/peak):	90/300 mW	90/300 mW
Cabling:		
Extension line	2-wire	2-wire



## LBB 7089/21 Industrial single call station



The industrial single call station is designed for quick single key access to one pre-determined station in any M100 S system. Ideal for use at doors, gates or in lifts.

The station is delivered as a flush mount unit with die-cast zinc alloy front lacquered in light grey. It has a built-in directory list and splash-proof front for light industrial environments where there is a requirement for flush or on wall mounting, the latter with an optional on wall back box.

The station can be used in connection with a CCTV camera system for remote observation.

Kits are available for increased audio output and/or remote door opening. Kits must be powered separately.

In operation the station allows for loudspeaking and handsfree conversation. Outgoing calls are made to one pre-programmed location by pressing the call button.

If the call is in indirect mode it has to be accepted by the receiver before normal duplex conversation can be established.

If an outgoing call is not answered within a pre-programmed time-frame, the call will automatically be reset. Any station in the system can reach the single call station by dialling the station's extension number.

## LBB 7089/22 Industrial dual call station



The industrial dual call station is identical to the industrial single call station but equipped with 2 call buttons and a call cancel button.

The industrial dual call station has access to 2 pre-programmed locations.

If a call is not answered within a pre-programmed time-frame the station will automatically be reset.

## LBB 7089/24 Industrial call station, 4 buttons



The station is identical to the industrial single call station but equipped with 4 call buttons and a call cancel button. The 4 call buttons give access to four different pre-programmed locations.

## LBB 7089/26 Industrial call station, 6 buttons



Identical to the industrial single call station but equipped with 6 call buttons and a call cancel button. The 6 call buttons give access to six different pre-programmed locations.

<i>Technical data:</i>	<i>LBB 7089/21/22/24/26</i>
<i>Dimensions (wxhxd) in mm/inch:</i>	130x265x75/5.1x10.4x3
<i>Weight, net, in kg/lb:</i>	1.4/3
<i>Environmental conditions, category:</i>	T1
<i>IP code:</i>	54/65 when properly sealed
<i>Approval:</i>	CE
<i>Supply voltage :</i>	36 V d.c.
At the station, idle	<10 V d.c.
At the station, in operation	18 - 36 V d.c.
<i>Current consumption</i>	
At the station, idle	<0.3 mA
At the station, in operation	25 - 38 mA
<i>Output power (continuous/peak):</i>	90/300 mW
<i>Cabling:</i>	
Extension line	2-wire

# Heavy duty and explosion-proof stations

## LBB 7089/40

### Heavy duty master station



The heavy duty master station is for use in severe indoor or outdoor applications. The station is especially designed for withstanding rigorous environments including temperature extremes and dusty or corrosive atmospheres.

Large keys provide for convenient operation even when wearing protective gloves.

Built-in microphone and external loud-speaker horn enable maximum adaptation to the local acoustical situation.

The heavy duty master station is delivered as a wall mount unit constructed from corrosion-proofed wide gauge aluminium and with an orange colour finish.

Front plate in blank aluminium enshrouds polyurethane elastomere sealing caps covering the selection and function buttons.

Controls for simplex mode and system functions. +/- buttons for accepting and rejecting certain functions.

Volume and privacy must be pre-set internally in each station.  
A call tone and a pilot lamp indicate connection.

A heavy duty handset kit may be fitted for use in noisy areas or for confidential calls.

External call signal may be rendered through separate bell or lamp giving a signal in areas with high noise level.

The heavy duty master station has a built-in application kit as standard which requires external power either locally or centrally.

When not used for external signalling the application kit can be used for opening doors.

## LBC 3490/10

### Loudspeaker horn, 16 ohm



This 10 1/2" x 7" speaker is designed for use with the heavy duty master station either outdoors or in industrial buildings and yards.

The horn is splash and dust-proof, made from aluminium, and is supplied with an adjustable mounting bracket.

Technical data:	LBB 7089/40	LBC 3490/10
<i>Dimensions (wxbxd) in mm/inch:</i>	160x260x106/6.3x10.2x4.2	Overall length: 276/10.9
<i>Weight, net, in kg/lb:</i>	2.7/5.9	1.25/2.8
<i>Environmental conditions, category:</i>	T4	Rated impedance: 16 ohm
<i>IP code:</i>	40 (front access)	65
<i>Approval:</i>	CE	Eff. freq. range (-10dB): 410- 3900 Hz
<i>Supply voltage :</i>	36 V d.c.	Power handling capacity: 10 W
At the station, idle	<10 V d.c.	
At the station, in operation	24 - 40 V d.c./18 - 30 V a.c.	
<i>Current consumption</i>		
At the station, idle	<0.3 mA	
At the station, in operation	25 - 38 mA	
From unregulated 30 V power	350 mA average at 16 W	
From regulated 36 V power	800 mA max.	
<i>Output power (continuous/peak):</i>	90/300 mW	
<i>Cabling:</i>		
Extension line	2-wire	

# Heavy duty and explosion-proof stations

## LBB 7089/41 Heavy duty single call station



The heavy duty single call station is designed for quick single key access to one pre-determined station in any M100 S system. The station is delivered as a flush mount unit with a die-cast zinc alloy front, lacquered in a light grey colour. Microphone nose, special loudspeaker protection, heavy duty call button and special silicone sealing of the printed circuit board make the station suitable for installation in heavy duty environments.

The station will withstand temperature extremes as well as dusty, humid or corrosive atmospheres. A large key provides convenient operation even when wearing protective gloves.

By adding an optional on wall back box the station will be transformed into a heavy duty, self-contained on wall unit.

It is ideal for use at doors or gates in a heavy duty environment or outdoors and exposed to all weather conditions.

A weather protection frame is available for further protection from rain and snow.

By pressing the station's call button an indirect call will be initiated to a pre-determined location.

If in indirect mode the call must be accepted by this station before normal duplex conversation can be established. Volume is pre-set in each station.

If the call is not answered within a pre-programmed time-frame, the station will automatically be reset.

A suitable handset can be added according to environment.

The station can be used in connection with a CCTV camera system for remote observation.

The station can be called by any other station in the system.

Kits are available for use with a door-opening mechanism for remote door opening. Kits must be powered separately.

## LBB 7089/42 Heavy duty dual call station



This station is identical to the heavy duty single call station but is equipped with 2 call buttons and a call cancel button. The heavy duty dual call station has access to 2 pre-programmed locations.

If a call is not answered within a pre-determined time-frame the station will automatically be switched off.

Technical data:	LBB 7089/41	LBB 7089/42
<i>Dimensions (wxhxd) in mm/inch:</i>	128x265x75/5x10.4x3	128x265x75/5x10.4x3
<i>Weight, net, in kg/lb:</i>	1.4/3	1.4/3
<i>Environmental conditions, category:</i>	T4	T4
<i>IP code:</i>	54/65 when properly sealed	54/65 when properly sealed
<i>Approval:</i>	CE	CE
<i>Supply voltage :</i>	36 V d.c.	36 V d.c.
At the station, idle	<10 V d.c.	<10 V d.c.
At the station, in operation	18 - 36 V d.c.	18 - 36 V d.c.
Power line	24 - 40 V d.c.	24 - 40 V d.c.
<i>Current consumption</i>		
At the station, idle	<0.3 mA	<0.3 mA
At the station, in operation	25 - 38 mA	25 - 38 mA
<i>Output power (continuous/peak):</i>	90/300 mW	90/300 mW
<i>Cabling:</i>		
Extension line	2-wire	2-wire

# Heavy duty and explosion-proof stations

## LBB 7089/50

### Explosion-proof master station IIC



The station is housed in a splash-proof dark grey cabinet for wall mounting. The cabinet is made of glass fibre reinforced, self-extinguishing polyester resin. All electronics are installed in an inner flame-proof box.

The station operates in duplex with a built-in microphone and amplifier for high output to a flame-proof loudspeaker horn. The keyboard has large keys for ease of operation.

Controls for simplex mode and system functions are identical to all other M100 S stations.

Privacy and external volume controls are not available.

## LBB 7089/52

### Explosion-proof dual call station IIC



The station is housed in a double housing for wall mounting and consists of a flame-proof box for the electronics and a splash-proof dark grey polyester box for the keyboard and cabling.

The keyboard/cabling box is made of glassfibre reinforced, self-extinguishing polyester resin.

The station has access to 2 pre-defined locations.

## LBB 7071/10

### Flame-proof loudspeaker horn, 8 W/8 ohm



The heavy duty flame-proof loudspeaker horn specially designed for use in areas where gasses or other explosives dictate special precautions. Suitable for use with explosion-proof master stations.

The loudspeaker is completely weather-proof, is resistant to salt-laden air and unaffected by most chemicals. Made in cast silumin with grey epoxy finish.

#### Technical data

Nominal impedance:	8 ohm
Rated power:	8 W
Frequency range:	500-6000 Hz
Protection:	IP 67
Dimensions, front and depth:	124 x 110 mm 4.88 x 4.33 in
Net weight:	1.5 kg, 3.3 lb

Classification	Explanation
EEx	Explosion-proof apparatus
e	Increased safety
d	Flame-proof enclosures
[ib]	Safety barrier
II	For use in places that are susceptible to fire/steam other than mines
C	Gas group (Acetylene/Hydrogen)
T6	Maximum surface temperature = 85°C

Technical data:	LBB 7089/50	LBB 7089/52
Dimensions (wxbxd) in mm/inch:	340x340x150/13.39x13.39x5.91	170x340x190/6.69x13.39x7.48
Weight, net, in kg/lb:	10.1/22.2	6.4/14.1
Environmental conditions, category:	T5	T5
Classification	EExed[ib]IIC T6	EExed[ib]IIC T6
IP code:	66	66
Supply voltage :		
Line, idle	10 V d.c.	10 V d.c.
Line, in operation	18-25 V d.c.	18-25 V d.c.
Power line	18-36 V d.c.	18-36 V d.c.
Current consumption		
Line, idle	<0.3 mA	<0.3 mA
Line, in operation	25 - 38 mA	25 - 38 mA
Power line	500 mA max.	500 mA max.
Output power (continuous/peak):	3.5 W/	3.5 W/
Cabling:		
Extension line/Power line	2-wire/2-wire	2-wire/2-wire

### LBB 7089/96

#### Chemical resistant master station



The chemical resistant master station is designed for efficient, loudspeaking, handsfree communication in any M100 S system.

It is delivered as a flush mount unit especially developed for use in hospital operating theatres or clean room environments.

The station front is covered by a polyester foil which is resistant to most fluids and detergents.

An optional back box enables for on wall mounting.

Keyboard with buttons for simplex mode and system functions, as well as +/- buttons for accepting and rejecting certain functions.

A call tone and a pilot lamp indicate connection. The volume is internally pre-set in each station.

The station may also be called in indirect mode, i.e. calls must be accepted before duplex connection can be established.

A handset may be installed to provide for lowspeaking conversation. \*)

### LBB 7089/97

#### Programme distribution station



The station is made for on wall or flush mounting and intended for use in staff rooms or patient living rooms.

Provision is made for programme distribution and announcements from other stations in the system but there is no possibility for initiating calls.

Loudspeaking, handsfree station with separate input for television audio.

A total of 8 audio channels can be selected from the operator panel, where channel 8 is TV-sound.

LEDs indicate selected programme and volume can be adjusted up and down. Separate OFF button. \*)

### LBB 7089/28

#### Emergency station with key release



This station is intended for use in industrial environments or in public areas where there is a need for a rugged single call station in a bright colour and key release of call button when pressed.

The emergency station can be used in any M100 S system and is similar in operation to any other M100 S single call station giving quick, single access to one pre-determined location.

The call will be in indirect or alarm mode and has to be accepted by the receiving station before normal duplex connection can be established. When a call is made the call button will stay depressed until manually released with a key.

The volume in the substation is pre-set individually.

The emergency station can be called from any other station in the system. \*)

\*) For technical data see next page.

## Data - special stations

	<i>LBB 7089/96</i>	<i>LBB 7089/97</i>	<i>LBB 7089/28</i>
<b><i>Dimensions (wxhxd):</i></b>	130x265x60 mm 5.12x10.43x2.36 in	93x224x70 mm 3.7x8.8x2.8 in	130x265x75 mm 5.12x10.43x3 in
Wall cut-out:	100x227x60 mm 3.94x8.94x2.36 in		
Weight, net:	450 g 0.99 lb	675 g 1.5 lb	1.4 kg 3.08 lb
<b><i>Housing:</i></b>		White ABS plastic	
<b><i>Keyboard:</i></b>		Polyester foil	
<b><i>Environmental conditions</i></b>			
Category:	T2	T2	T3
Ambient temperature range::		0-45°C	
Relative humidity:		10-95%	
Protection:	IP 65	IP 40	IP 54/64 when properly sealed
<b><i>Supply voltage:</i></b>			
Intercom line, nominal:		36 V d.c.	40/18 V d.c. (extension line)
Intercom line, min./max.:		13 - 40 V	
<b><i>Current consumption :</i></b>			
Intercom line, station OFF:		0.3 mA	38/0.3 mA (extension line)
Intercom line, station ON:		38 mA	
Power line idle:		20 mA	
Power line at max. output:		150 mA	
<b><i>Output power:</i></b>	90/300 mW	300 mW/1 W	90/300 mW
<b><i>Cabling:</i></b>			
Extension line	2-wire		2-wire

## LBB 7072/10 Master station kit



The kit is a complete master station but delivered without cabinet, intended for self-mounting or as a spare part kit for M100 S master stations.

The kit contains the following parts:

- loudspeaker including wires with connector
- complete keyboard with all master station keys and mounting frame
- electret microphone with wires and connector
- station PCB with flat cable keyboard connector
- 4-wire station cable with open ends

## LBB 7072/32 Single/Dual call station kit



The kit is a complete single/dual call station but delivered without cabinet, intended for self-mounting or as a spare part kit for M100 S single/dual call stations.

The kit contains the following parts:

- loudspeaker including wires with connector
- an "A" and a "B" key for calling pre-set numbers
- reset key
- red LED lamp for indication of station in use
- electret microphone with wires and connector
- station PCB with single-in-line keyboard connectors

<i>Dimensions (wxhxd) in mm/inch:</i>	<i>LBB 7072/10</i>	<i>LBB 7072/32</i>
<i>Environmental conditions, category:</i>	T1	T1
<i>Approval:</i>	CE	CE
<i>Supply voltage :</i>	36 V d.c.	36 V d.c.
- At the station, idle	<10 V d.c.	<10 V d.c.
- At the station, in operation	18 - 36 V d.c.	18 - 36 V d.c.
<i>Current consumption</i>		
- At the station, idle	<0.3 mA	<0.3 mA
- At the station, in operation	25 - 38 mA	25 - 38 mA
<i>Output power (continuous/peak):</i>	90/300 mW	90/300 mW

## Station kits and coupler

### LBB 7999/35 M100 S P.A. coupler



M100 S P.A. coupler for connection to any line in the system provides interface to a Public Address system. The P.A. coupler may be called from any station. When called, a relay contact for e.g. switching on the P.A. amplifier is activated, and the audio line is connected to the input of the amplifier (600 ohm/0dBm).

The various station kits enhance the operation of any M100 S station by providing unique functions in several combinations where required.

LBB 7073/65, LBB 7073/66 and LBB 7073/67 can be mounted in the cover of the station itself whereas the application kit LBB 7073/68 requires mounting in optional back box.

External call/door opening and heavy duty handset kit do not require external power supply. All other functions require a local or central external power supply.

### LBB 7073/65 Audio/Relay kit



This kit includes

- 6 W peak power amplifier for use with external loudspeaker or improved internal loudspeaker performance
- Relay function with adjustable timer for activating an external call device or for remote door-opening function
- Opto coupler output for station-on signal to external equipment

### LBB 7073/66 Audio kit



This kit includes

- 6 W peak power amplifier for external or improved internal loudspeaker performance
- Interface circuitry for connection of heavy duty handset

#### 6W Amplifier

##### *Supply voltage:*

From ext. power, max. 40 V d.c./30 V a.c.

From ext. power, min. 24 V d.c./18 V a.c.

##### *Current consumption:*

From unregulated power 80 mA average

From regulated power 300 mA max

##### *Relay ratings:*

Relay timing 0.8 - 35 sec.

Maximum switchable voltage  
50 V d.c./125 V a.c.

Maximum switchable current 1 A.

Technical data	LBB 7999/35	LBB 7073/65	LBB 7073/66
<i>Dimensions (wxhxd) in mm/inch:</i>	65x120x40/2.6x4.7x1.6	70x24x68/2.8x0.9x2.7	70x24x68/2.8x0.9x2.7
<i>Weight, net, in kg/lb:</i>	0.100/0.2	0.055/0.1	0.055/0.1
<i>Environmental conditions, category:</i>	T2	T1	T1
<i>IP code:</i>	42		
<i>Approval:</i>	CE	CE	CE
<i>Supply voltage :</i>	36 V d.c.	36 V d.c.	
At the station, idle	<10 V d.c.	0 V d.c.	
At the station, in operation	18 - 36 V d.c.	15 V d.c.	
<i>Current consumption</i>		24-36 V d.c./18-30 V a.c.	24-36 V d.c./18-30 V a.c.
At the station, idle	<0.3 mA	0 V	0 V
At the station, in operation	27 mA	6-10 mA	6-10 mA
<i>Output power (continuous/peak):</i>		6 W in 8 ohms	6 W in 8 ohms
<i>Cabling:</i>			
Extension line	2-wire	2-wire	2-wire
Power line		2-wire	2-wire



**LBB 7073/67**  
**Relay kit**



This kit includes:

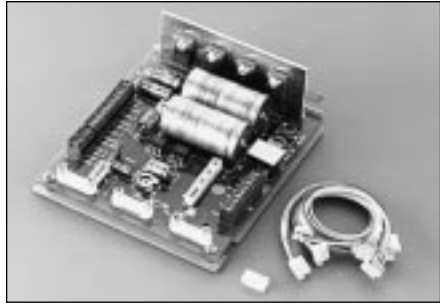
- Relay function with adjustable timer for activating an external call device or for remote door-opening function

**External call/door opening**

**Relay ratings:**

Relay timing 0.8 - 35 sec.  
Maximum switchable voltage 50 V d.c./125 V a.c.  
Maximum switchable current 1 A

**LBB 7073/68**  
**Application kit**



This kit includes:

- 16 W peak power amplifier for use with external loudspeaker
- Relay function with adjustable timer for activating an external call device or for remote door-opening function
- Interface circuitry for connection of heavy duty handset
- Opto coupler output for station-on signal to external equipment
- 24 V station-on lamp driver

**16 W Amplifier**

**Supply voltage:**

From ext. power, max. 42 V d.c./30 V d.c.  
From ext. power, min. 24 V d.c./18 V a.c.

**Current consumption:**

From unregulated power 200 mA average at 16W  
From regulated power 800 mA max.

**Opto coupler interface**

**Maximum OFF voltage:** 30 V d.c.  
**Maximum reverse voltage:** 7 V d.c.  
**Source/sink current, maximum:** 50 mA

<i>Technical data:</i>	<i>LBB 7073/67</i>	<i>LBB 7073/68</i>
Dimensions (wxhxd) in mm/inch:	70x24x68/2.8x0.9x2.7	102x48x130/5.1x1.9x5.1
Weight, net, in kg/lb:	0.055/0.1	0.160/0.4

## Station accessories

### HANDSET KITS

For use with master stations in noisy areas or when confidentiality is required.

#### **LBB 7073/80** **Desktop handset kit**



For LBB 7089/10 Desktop master stations.

#### **LBB 7073/82** **Handset with cradle kit**



For use with compact master stations.

#### **LBB 7071/71** **Heavy duty handset kit**



For use with Industrial stations.

### FRAMES AND BACK BOXES

#### **LBB 7073/70** **Flush mount frame**



For flush mounting of compact stations with or without back box.

Dimensions (wxhxd): 130x265x18 mm  
5.12x10.43x0.71 in

Cut-out hole (wxhxd): 107x231x63 mm  
4.21x9.09x2.48 in

#### **LBB 7073/73** **Weather protection frame**



Metal frame lacquered in grey for weather protection of industrial stations.

Dimensions(wxhxd): 140x272x80mm  
5.51x10.79x3.15 in

#### **LBB 7073/84** **Cradle bracket**



For table-top use of compact stations.

#### **LBB 7073/60** **On wall back box**



For on wall mounting of heavy duty and industrial stations

Station cord and termination included.

Dimensions (wxhxd): 130x265x67 mm  
5.12x10.43x2.64 in

#### **LBB 7073/61** **Flush mount back box, 60 mm**



For flush mounting of compact and industrial stations.

Station cord and termination included.

Compact stations need flush mount frame.

Dimensions (wxhxd): 120x254x60 mm  
4.72x10.00x2.36 in

Cut-out hole (wxhxd): 108x234x60 mm  
4.25x9.21x2.36 in

### **LBB 7073/62** **On wall back box, plastic version**



For on-wall mounting of compact stations.

Station cord and termination included.  
Dimensions (wxhxd): 130x265x75 mm  
5.12x10.43x2.95 in

### **LBB 7073/63** **Flush mount back box, 75 mm**



For flush mounting of heavy duty industrial stations. Station cord and termination included.

Compact stations require flush mount frame.

Dimensions (wxhxd): 120x254x75 mm  
4.72x10.00x2.95 in  
Cut-out hole (wxhxd): 108x234x75 mm  
4.25x9.21x2.95 in

### **LBB 7073/74** **Outdoor station heating kit**



A heating kit may be mounted for outdoor stations located where temperatures down to -25°C can be expected. Also suitable for drying-out condensed water.  
Dimensions (wxhxd): 91x96x20 mm  
3.58x3.78x0.79 in

Weight, net: 90 g

0.2 lb

Power rating: 12 W at 24 V  
maximum: 25 W at 36 V

Temperature elevation at 12 W: +10°C

### **LBB 7095/01** **Power supply, 24 V/40 W- Euro connector**



Will provide local power for up to 5 stations with audio/relay kit, or 2 stations with application kit.

Dimensions (wxhxd) in mm/inch:  
100x63x47/3.9x2.5x1.9

Weight in kg/lb: 0.250/0.6

Input voltage: 198 - 264 V a.c.

Output voltage: 24 V d.c.

Load current: 1.5 A

Approval: CE

### **STATION CORDS, WALL SOCKETS AND PLUGS**

#### **LBB 7069/08** **Wall socket, 6-pole, 10 pack**

Requires soldering of the installation cable inside the socket.

#### **LBB 7069/18** **6-pole plug, male, 10 pack**

#### **LBB 7069/21** **Wall socket, snap-in, 4-pole, 10 pack**

This socket has screw connection for the installation cable.

#### **LBB 7069/62** **Station cord, snap-in connector, 10 pack**

#### **LBB 7069/63** **Station cord, 6-pole connector, 10 pack**

#### **LBB 7069/64** **Station cord interconnector, 4-pole, 10 pack**

This interconnector is used to extend the station cable by connecting two or more station cords in series.

## Station and accessory combinations

<div> <div>Stations</div> <div>Accessories</div> </div>	Handsets	Loud-speakers	Mounting accessories	PSU/Cords	Heating kit
	LBB 7073/80 Desktop handset kit LBB 7073/82 Handset with cradle kit LBB 7073/84 Cradle bracket LBB 7071/71 Heavy duty handset kit	LBC 3490/10 Loudspeaker horn, 16 ohm LBB 7071/10 Flame-proof loudspeaker horn, 8 W/8 ohm	LBB 7073/60 On wall back box LBB 7073/61 Flush mount back box, 60 mm LBB 7073/62 On wall back box, plastic LBB 7073/63 Flush mount back box, 75 mm LBB 7073/70 Flush mount frame LBB 7073/73 Weather protection frame	External power supply Station cord	LBB 7073/74 Outdoor station heating kit
<b>STANDARD STATIONS</b>					
LBB 7089/10 Desktop master station	< < - -	§ -	- - - -	- α	-
LBB 7089/15 Compact master station	- < < -	§ -	§ § < §	- - α	-
LBB 7089/16 Compact master display station	- < < -	§ -	§ § < §	α α α	-
LBB 7089/18 Compact master display w/back light	- < < -	§ -	§ § < §	α α α	-
LBB 7089/31 Single call station	- < < -	§ -	§ § < §	- - α	-
LBB 7089/32 Dual call station	- < < -	§ -	§ § < §	- α	-
<b>INDUSTRIAL STATIONS</b>					
LBB 7089/20 Industrial master station	- < - §	§ -	< < - < - <	- - <	§
LBB 7089/30 Industrial master display w/back light	- < - §	§ -	< < - < - <	α <	§
LBB 7089/21 Industrial single call station	- < - §	§ -	< < - < - <	- <	§
LBB 7089/22 Industrial dual call station	- < - §	§ -	< < - < - <	- <	§
<b>HEAVY DUTY STATIONS</b>					
LBB 7089/40 Heavy duty master station	- - - <	α -	- - - - -	α -	<
LBB 7089/41 Heavy duty single call station	- > - §	§ -	< > - < - <	- §	§
LBB 7089/42 Heavy duty dual call station	- > - §	§ -	< > - < - <	- §	§
<b>SPECIAL STATIONS</b>					
LBB 7089/50 Explosion-proof master station IIC	- - - -	- α	- - - - -	α -	-
LBB 7089/52 Explosion-proof dual call station IIC	- - - -	- α	- - - - -	α -	-
LBB 7089/96 Chemical resistant master station	- > - -	§ -	< < - < # -	- α	-
LBB 7072/10 Master station kit	- < - §	§ -	- - - - -	- <	-
LBB 7072/32 Single/Dual call station kit	- < - §	§ -	- - - - -	- <	-
LBB 7076/12 Programme distribution station	- - - -	§ -	§ § # § < -	- α	-

< = Possible

α = Required

- = Not possible

§ = Possible in combination with other accessories

# = Included

> = Not recommended

## Kit and accessory combinations

Kits	Accessories		Stations		Loudspeakers	Back boxes and frames	Power Supply
LBB 7089/97 Programme distribution station			LBB 7089/97 Programme distribution station				
LBB 7089/10 Desktop master station			LBB 7089/10 Desktop master station				
LBB 7089/15 Compact master station			LBB 7089/15 Compact master station				
LBB 7089/16 Compact master display station			LBB 7089/16 Compact master display station				
LBB 7089/18 Compact master display station with back light			LBB 7089/18 Compact master display station with back light				
LBB 7089/31 Single call station			LBB 7089/31 Single call station				
LBB 7089/32 Dual call station			LBB 7089/32 Dual call station				
LBB 7089/20 Industrial master station			LBB 7089/20 Industrial master station				
LBB 7089/30 Industrial master display station with back light			LBB 7089/30 Industrial master display station with back light				
LBB 7089/21 Industrial single call station			LBB 7089/21 Industrial single call station				
LBB 7089/22 Industrial dual call station			LBB 7089/22 Industrial dual call station				
LBB 7089/40 Heavy duty master station			LBB 7089/40 Heavy duty master station				
LBB 7089/41 Heavy duty single call station			LBB 7089/41 Heavy duty single call station				
LBB 7089/42 Heavy duty dual call station			LBB 7089/42 Heavy duty dual call station				
LBB 7089/50 Explosion-proof master station IIC			LBB 7089/50 Explosion-proof master station IIC				
LBB 7089/52 Explosion-proof dual call station IIC			LBB 7089/52 Explosion-proof dual call station IIC				
LBB 7089/96 Chemical resistant master station			LBB 7089/96 Chemical resistant master station				
LBB 7072/10 Master station kit			LBB 7072/10 Master station kit				
LBB 7072/32 Single/Dual call station kit			LBB 7072/32 Single/Dual call station kit				
LBC 3490/10 Loudspeaker horn, 16 ohm			LBC 3490/10 Loudspeaker horn, 16 ohm				
LBB 7071/10 Flame-proof loudspeaker horn, 8W 8ohm			LBB 7071/10 Flame-proof loudspeaker horn, 8W 8ohm				
LBB 7073/60 On wall back box			LBB 7073/60 On wall back box				
LBB 7073/61 Flush mount back box, 60 mm			LBB 7073/61 Flush mount back box, 60 mm				
LBB 7073/62 On wall back box, plastic			LBB 7073/62 On wall back box, plastic				
LBB 7073/63 Flush mount back box, 75 mm			LBB 7073/63 Flush mount back box, 75 mm				
LBB 7073/70 Flush mount frame			LBB 7073/70 Flush mount frame				
External power supply							

KITS							
LBB 7073/65 Audio/Relay kit	<	<	<	<	-	<	<
LBB 7073/66 Audio kit	<	<	<	<	-	<	<
LBB 7073/67 Relay kit	<	<	<	<	-	<	<
LBB 7073/68 Application kit	-	-	§	§	-	§	§
LBB 7073/74 Outdoor station station heating kit	-	-	-	-	-	§	§

< = Possible

- = Not possible

# = Included

α = Required

§ = Possible in combination with other accessories

# MI00 Nurse Call System

## System build-up and description

The Philips M100 Nurse call and Hospital communication system consists of a number of communication terminals for patients and staff, partly controlled through PAN buses connected to one or more exchanges with or without an ODIN distribution network.

The heart of the system is the intercom exchange. This can be:

*A stand-alone exchange ranging from 2 to 384 subscribers in a centralized system*

or

*A network exchange ranging from 2 to 768 subscribers in a decentralized system*

The exchanges are expandable in modules. In a network several exchanges can be connected over ODIN for up to more than 10.000 subscribers.

Every exchange has its own typenumber but every module and system allows choices of:

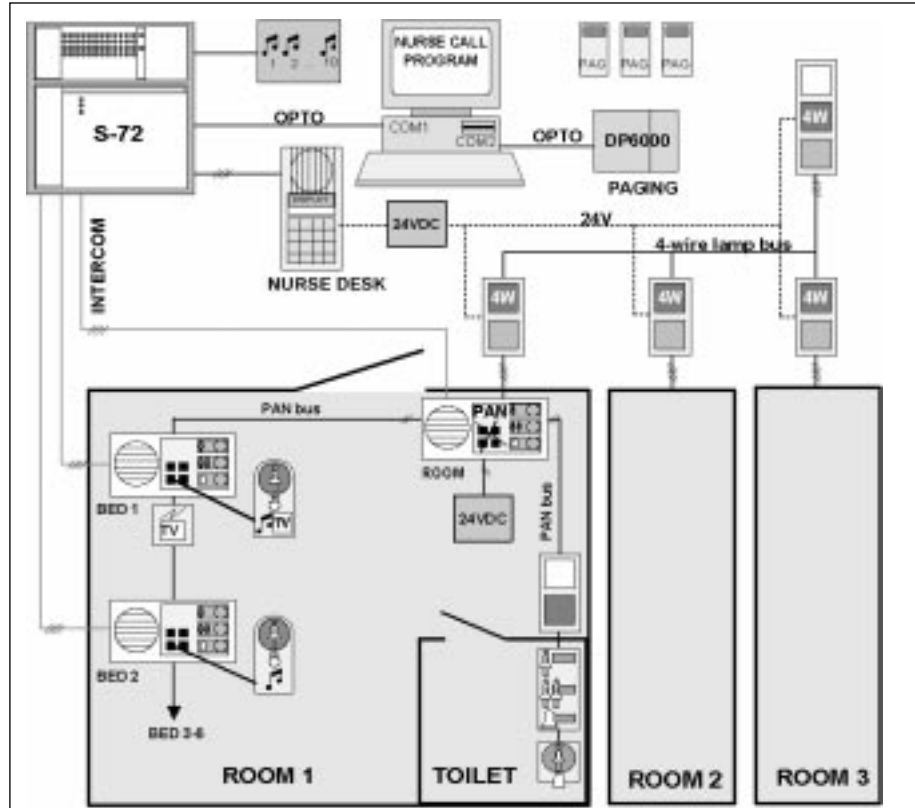
- *Number and type of line cards in steps of 8 subscriber lines*
- *Type of line termination*
- *Optional voice card for digitalized voice messages*

### *Tieline or telephone couplers*

All these are described separately in the M100 S-72 Exchange family system description.

The following system components are connected to the exchanges:

- *Intercom stations*
- *Bedside stations*
- *Nurse desks*
- *One or more PCs*
- *Entertainment programme sources*
- *DP6000 Paging system*



A nurse call system consists of several independent PAN areas.

A PAN area is normally a patient room with integrated bath/toilet or a bath/toilet area. Other configurations can be chosen.

Each PAN area must have at least one bedside station, one PAN controller plug-in card and a number of PAN terminals according to the individual needs.

The PAN area is arranged in groups. A group is normally a bedside station and/or terminals associated with one hospital bed or toilet(s). Other definitions may be chosen.

Each PAN area includes up to 8 groups: one common group, 6 bed groups and one toilet group. The PAN controller offers up to 10 functions per group.

PAN controller plug-in board is a separate printed circuit board that contains the controller of the PAN system.

This plug-in board is mounted in one bedside station in a PAN area and includes a microprocessor-based PAN bus driver.

The controller transmits and receives PAN information on the 2-wire PAN bus to and from all terminals in that PAN area.

The power to the terminals is connected to the same PAN bus.

PAN signalling is given as a lamp signal code, a display pager message and/or display on a nurse desk.

The lamp information may be transferred on a separate 4-wire lamp bus connected to the PAN controller to a common corridor lamp to indicate the highest priority call from a group of rooms.

The PAN controller plug-in board and the bedside station part are powered from a local 24 V d.c. power supply.

## System build-up and description

All PAN data is transmitted to an intercom exchange.

The exchange is configured by a maintenance PC to handle the data thereafter given as alphanumeric information on a display station (nurse desk) and/or in radio-paging receivers as a bleep pattern and numeric terminal number (ward, room and bed).

One or more Nurse desks or PC terminals are normally connected for use at central points like head nurse, staff room, etc.

These stations will, in addition to operating as normal intercom stations for communication, display all calls and call status.

PC programs such as System maintenance program for Windows for setting and changing system parameters, Nurse call

program for administration of patient-to-staff communication, nurse interface to paging or statistical program for logging, are available.

This means that one or more PCs are normally connected for maintenance and administration purposes.

As part of the "comfort-for-the-patients" concept, up to 10 entertainment programmes can be selected by the patient from the remote control connected to each bed station.

The sources for these programmes are connected to the intercom exchange for distribution to the entire system.

A Philips DP 6000 Paging system will, in general, be connected to the Nurse call system.

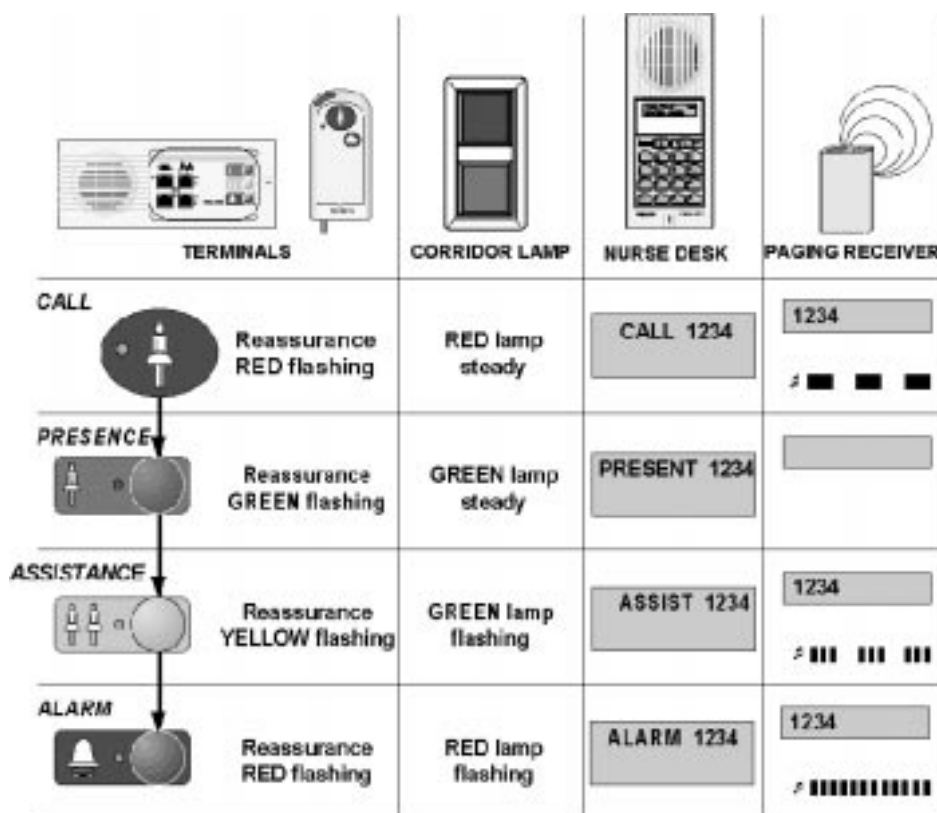
The paging system consists of a transmitter and several receivers, normally with a numeric display and audio indication separating different call types.

When a patient, assistance or alarm call is initiated the display will show the ward, room and bed number and the tone will indicate the type of call.

The nurse can go to the nearest intercom station, key the displayed digits as shown on the paging receiver and get in immediate contact with the patient calling.

The paging system is connected to the nurse call system via a PC running the nurse call program.

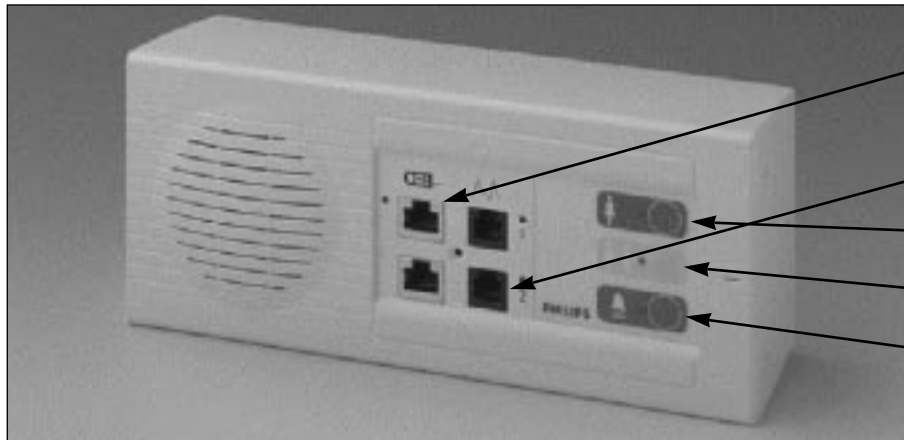
### Basic operational flow chart



## Equipment and accessories

### LBB 7077/I0

#### Bedside station



Two parallel remote control connectors

Two independant medical alarm connectors

Presence/reset button

Assistance button

Alarm button

#### Presence/Reset button

- Green button with presence symbol
- Push when present at patient
- Steady green light when operated
- Reset the call when leaving the patient
- Glowing position light

#### Assistance button

- Yellow button with assistance symbol
- Push to call for assistance
- Flashing yellow light when operated
- Glowing position light

#### Alarm button

- Red button with alarm symbol
- Push and hold for 3 seconds to call for emergency assistance
- Flashing red light when operated
- Glowing position light

#### Dual medical alarm connection

- 2 x 6-pin RJ45 modular connector for external alarm
- Activated by contact closure or opening in external surveillance equipment
- Glowing position lights, flashing when operated
- Safety: External alarm if plug removed, push Reset within 3 seconds to avoid alarm call
- 2 seconds flashing light for OK confirmation when plug is connected

#### Dual remote control connection

- 2 x 8-pin RJ45 modular connector for pear button/remote PAN control units LBB 7077/30/31/32 or /33
- Glowing position light
- Safety: Nurse call if plug removed, push Reset within 3 seconds to avoid alarm call
- 2 seconds flashing light for OK confirmation when plug is connected

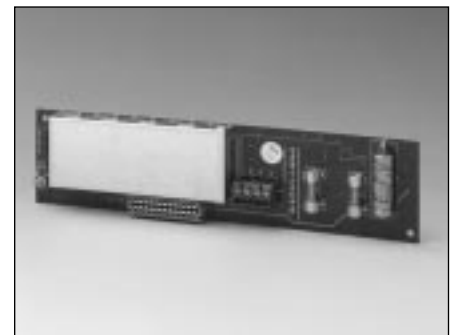
#### Loudspeaking intercom

- Loudspeaking handsfree duplex conversation
- Microphone in remote control
- Can be called from nurse desk or other intercom stations
- Can not initiate calls

Note: If both remote control inputs are used, one should be an LBB 7077/30 Patient remote call to avoid conflict between bed light, programme and TV selections.

### LBB 7077/00

#### PAN controller plug-in board



Each PAN area must have one PAN controller and a number of PAN terminals according to number of beds and functions. The PAN controller plug-in card must be mounted in one of the bedside intercom stations (group 0-6).




### Remote control functions

#### *Nurse call*

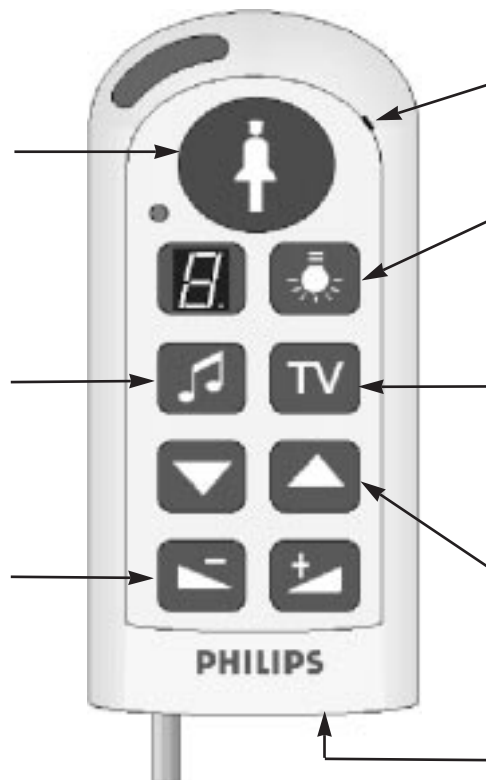
- \* Generates a call request to the nursing staff
- \* Position light
- \* Confirmation light when operated

#### *Programme selection*

- \* Turns ON audio programmes
- \* Steps through 10 audio programmes
- \* Selected programme displayed as: 1, 2. ...0
- \* TV sound displayed as: 
- \* Programme OFF displayed as: -

#### *Audio volume*

- \* Increase audio volume by + button
- \* Decrease volume by - button
- \* 8 steps, step 4 = normal



#### *Microphone*

- \* LBB 7077/31/32 only

#### *Bed lamp switch*

- \* Toggle bed light ON and OFF
- \* Optional bistable impulse relay LBB 7076/75 is needed

#### *TV on/off*

- \* Toggles TV set ON and OFF
- \* PAN TV interface - U40 LBB 7077/71 must be connected to the PAN bus

#### *TV programme selection*

- \* Select TV channel up and down
- \* PAN interface terminal LBB 7077/71 must be connected to the PAN bus

#### *Headset connection*

- \* LBB 7077/31/32 only
- \* 3.5 mm jack for headset
- \* Loudspeaking intercom calls will interrupt programme

### **LBB 7077/36**

#### **Cradle for remote control**



### **LBB 7077/70**

#### **Cord saver - RJ45**

All remote controls have a male/female connector in the cord approx. 15 cm from the remote control RJ-plug. These connectors act as a "fuse" to ensure that neither the bedside station nor the remote control will be damaged if the remote control is accidentally pulled.

A nurse call is initiated if the cord saver is released. The call can be avoided if the reset button is pushed within 3 seconds. Normal situation is restored when the cord saver is re-connected. The LED will blink for 2 seconds to confirm connection.

## Equipment and accessories

### PATIENT REMOTE CONTROLS

#### LBB 7077/30 Patient remote call



#### LBB 7077/31 Patient remote audio



#### LBB 7077/32 Patient remote audio & TV



#### LBB 7077/33 Patient remote call & light



### TERMINALS

#### LBB 7077/35 Pull-cord terminal



- Generates a nurse call to the staff
- Red flashing light when in operation
- Glowing position light
- 190 mm nylon red pull-cord
- Frame and housing included for on wall mounting
- IP 54 protection

#### LBB 7077/40 Presence, assistance & alarm terminal



- Frame and housing not included
- Fits in standard U40 housing for on wall and flush mount

#### LBB 7077/41 Presence & assistance terminal



- Frame and housing not included
- Fits in standard U40 housing for on-wall and flush mount

#### LBB 7077/71 PAN TV Interface



- Infra-red remote control for TV on/off and channel selection. Operated by LBB 7077/32
- The TV interface terminal is delivered with frame and casing
- A TV audio trafo kit is included in the type no. Can also be delivered separately

### LBB 7077/42 Presence terminal



- Frame and housing not included
- Fits in standard U40 housing for on wall and flush mount

#### **Presence/Reset button**

- Green button with presence symbol
- Push when present at patient
- Steady green light when operated
- Reset call when leaving the patient
- Glowing position light

### LBB 7077/43 Presence & alarm terminal



- Frame and housing not included
- Fits in standard U40 housing for on wall and flush mount

#### **Presence/Reset button**

- Green button with presence symbol
- Push when present at patient
- Steady green light when operated
- Reset call when leaving the patient
- Glowing position light

#### **Alarm button**

- Red button with alarm symbol
- Push and hold for 3 seconds to call for emergency assistance
- Flashing red light when operated
- Glowing position light

### LBB 7077/44 Call button terminal



- Generates a nurse call to the staff
- Red button with nurse symbol
- Red flashing light when operated
- Glowing position light
- Frame and housing not included
- Fits in standard U40 housing for on wall and flush mount

### LBB 7077/45 Patient remote terminal



- Frame and housing not included
- Fits in standard U40 housing for on wall and flush mount
- Connector for Patient remote call LBB 7077/30
- Nurse call function only can be used in remote controls LBB 7077/31/32/33
- Flashing red light when operated
- Glowing position light
- Safety: Nurse call if plug removed, push Reset for same bed within 3 seconds to avoid safety call
- 2 seconds flashing light for OK confirmation when plug is connected

### LBB 7077/50 Dual external alarm terminal



- Frame and housing not included
- Fits in standard U40 housing for on wall and flush mount

#### **Dual external alarm connection**

- 2 x 6-pin RJ45 modular connector for external alarm
- Activated by contact closure or opening in external surveillance equipment
- Glowing position lights, flashing when operated
- Safety: External alarm if plug removed, push Reset button within 3 seconds to avoid safety call
- 2 seconds flashing light for OK confirmation when plug is connected

### LBB 7077/51 Alarm terminal - heavy duty



- Frame and housing not included
- Fits in standard U40 housing for on wall and flush mount

#### **Alarm button**

- Red button with alarm symbol
- Push and hold for 3 seconds to call for emergency assistance
- Flashing red light when operated
- Glowing position light

## Equipment and accessories

### LBB 7076/61/62/63

Terminal housings - single, dual & triple



- Standard U40 format
- For flush mounting of all PAN terminals in standard U40 boxes
- Casings for on-wall mounting included
- White coloured plastic

### LBB 7076/60

Terminal cover plate

- Plain white plastic plate to blank out a terminal housing
- Snaps into terminal frames

### LBB 7073/63

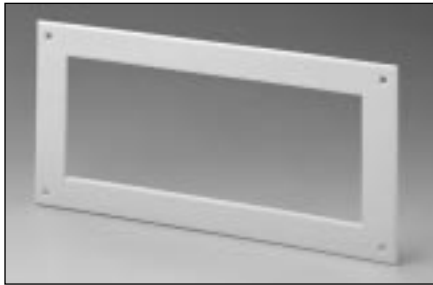
Flush mount back box, 75 mm



- Steel plate box for on-wall mounting
- Station cord and termination included
- Size 120 x 254 x 75 mm

### LBB 7073/71

Flush mount frame, white



- White plastic frame for flush mounting of bedside stations
- Fits LBB 7073/63/60 and /61

### LBB 7077/25

PAN lamp terminal, single



- One lamp without glass in single white housing with frame and casing for on-wall mounting
- Can be programmed to follow any available light signal code in the system
- Coloured glass for selected light code function is optional

### LBB 7077/26

PAN lamp terminal, dual



- Two lamps without glass in dual white housing with frame and casing for on-wall mounting
- Both lamps can be individually programmed to follow any available light signal code in the system
- Coloured glass for selected light code function is optional

### LBB 7076/75

Bi-stable control relay



- Bi-stable relay to toggle the bedhead light ON/OFF
- Connected to the BED LAMP terminal
- Coil: 24 V d.c.  
Switch: 250 V d.c./10 A

### LBB 7077/20 Dual lamp terminal, 4-wire



- Two lamps without glass in white dual housing with frame and casing for on-wall mounting
- DIN STANDARD:
  - . Lamp marked "A" can be programmed to either **White** or **Red**
  - . Lamp marked "B" can be programmed to either **Red** or **Green**
- DUTCH STANDARD:
  - . Lamp marked "A" can be programmed to **Yellow**
  - . Lamp marked "B" can be programmed to **White**

### LBB 7077/21 Dual lamp terminal, 4-wire with buzzer



- Two lamps without glass + buzzer in white triple housing with frame and casing for on-wall mounting
- Piezo electric buzzer for audio alert signal in combination with lamp signal.
- Rapid or slow sound sequences according to call priority
- Built-in volume control
- DIN STANDARD:
  - . Lamp marked "A" can be programmed to either **White** or **Red**
  - . Lamp marked "B" is factory-set to **Green**
- DUTCH STANDARD:
  - . Lamp marked "A" can be programmed to **Yellow**
  - . Lamp marked "B" is factory-set to **White**

NB: Can NOT be programmed to "Dutch hospital with reset only"

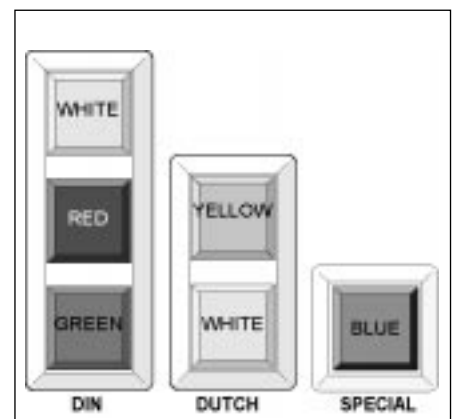
### LBB 7077/22 Triple lamp terminal, 4-wire



- Three lamps without glass in white triple housing with frame and casing for on-wall mounting
- DIN STANDARD:
  - . Lamps are factory-set to **White, Red and Green**
- Indicates all call types

NB: Three lamps are not relevant in DUTCH standard

### Lamp terminal glass



LBB 7076/26:	RED
LBB 7076/27:	GREEN
LBB 7076/28:	WHITE
LBB 7076/29:	YELLOW
LBB 7076/37:	BLUE

## Technical data

		<b>LBB 7089/97</b> <i>Programme distribution station</i>	<b>LBB 7077/10</b> <i>Bedside station</i>	<b>Terminals</b>	<b>Lamp terminals</b>
<b>Dimensions (wxhxd) in mm/inch:</b>		224x93x70/ 8.8x3.7x2.8	224x93x70/ 8.8x3.7x2.8	73x73x20/ 2.9x2.9x0.8 83x83x28/ 3.3x3.3x1.1	
Including on-wall frame					
	LBB 7077/25:				83x83x48/ 3.3x3.3x1.9
	LBB 7077/20/26:				155x83x48/ 6.1x3.3x1.9
	LBB 7077/21:				225x83x48/ 8.9x3.3x1.9
	LBB 7077/22:				225x83x48/ 8.9x3.3x1.9
Flush mounted				83x83x9/3.3x3.3x0.04	
<b>Weight, net in kg/lb:</b>		0.675/1.5	0.675/1.5	0.040/0.1	
Including on-wall frame				0.070/0.2	
	LBB 7077/25:				
	LBB 7077/20/26:				0.125/0.3
	LBB 7077/21:				0.180/0.4
	LBB 7077/22:				0.190/0.42
<b>Housing:</b>					
	As delivered:	White ABS plastic	White ABS plastic	None	On wall
	LBB 7077/35/71:			On wall housing LBB 7076/61	
<b>Keyboard:</b>		Polyester foil	Polyester foil	Polyester foil	
<b>Environmental conditions, category:</b>		T2	T2	T2	T2
Ambient temperature range:		0-45°C	0-45°C	0-45°C	0-45°C
Relative humidity:		10-95 %	10-95 %	10-95 %	10-95 %
Approval:		CE	CE	CE	CE
<b>Supply voltage:</b>					
Intercom line,	nominal:	36 V d.c.	36 V d.c.		
	min./max.:	13-40 V	13-40 V		
Power supply,	nominal:		24 V d.c.		24 V d.c.
	min./max.:		18-30 V		18-30 V
From PAN bus,	nominal:		24 V d.c.	24 V d.c.	
	min./max.:		18-26 V	18-26 V	
4-wire lamp bus,	signal on:				12 V
	signal off:				0 V d.c.
	signal blink:				6 V d.c.
<b>Current consumption:</b>					
Intercom line,	station OFF:	0.3 mA	0.3 mA		
	station ON:	38 mA	28 mA		
Power line,	lamp OFF:				10 mA
	lamp ON:				190 mA
	idle:	20 mA	20 mA		
	at max. output:	150 mA	110 mA		
PAN bus,	inactive terminal:		10 mA	10 mA	
	single function, max.:		20 mA	20 mA	
	dual function, max.:		30 mA	30 mA	
Lamp bus					0 mA

## Technical data

		<i><b>LBB 7089/97 Programme distribution station</b></i>	<i><b>LBB 7077/10 Bedside station</b></i>	<i><b>Terminals</b></i>	<i><b>Lamp terminals</b></i>
<i><b>Output power:</b></i>		300 mW/1 W			
Loudspeaker	Rloop=450 ohm:		25 mW		
	Rloop=0 ohm:		300 mW		
Headset			7 mW		
<i><b>Headset:</b></i>					
Impedance			2x32 ohm		
Plug	Stereo jack:		3.5 mm		
<i><b>Cabling:</b></i>					
Extension line			2-wire	2-wire	
Max. loop resistance				450 ohm	
Power line			2-wire		2-wire
From PAN bus			2-wire	2-wire	4-wire
Max. loop resistance,	at 0.2 A:				20 ohm
	< 0.45 A:		20 ohm	20 ohm	
	at 0.6 A:		16 ohm	16 ohm	8 ohm
	at 1.0 A:		8 ohm	8 ohm	4 ohm
	at 1.5 A:				2.7 ohm
	at 2.0 A:				2 ohm
<i><b>IP code:</b></i>		40	41	40	40
LBB 7077/35				54	

# M100 S-16/32 Intercom System

## Introduction

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The M100 S-16 Intercom system is designed to provide cost-effective, hands-free internal communication in any organization with the need for up to 32 extensions.

A basic system for up to 16 stations is available in a start pack with or without display station comprising of the M100 S-16 Exchange equipped for four lines, three M100 S Master stations and all equipment for installation. Just add two wires from each station location to the termination board in the exchange.

This basic system is easily extended up to 16 lines. Simply plug in more line cards in the exchange, each providing

two new lines, and select more stations for individual requirements from probably the most comprehensive and modular intercom product range available.

The simple two-wire star configuration can easily be extended to cover new locations.

To extend above 16 lines, plug a second M100 S-16 Exchange to the original one, and add line cards up to 32 lines.

Should the need for more than 32 extensions arise or special functions that are not available in the M100 S-16 be required, the exchange may, at any time, be unplugged and replaced with a larger exchange in the S-72 range in just a few minutes.



The M100 S-16 Exchange provides as standard all the practical problem-solving solutions described below.

### ***Two-way handsfree conversation***

Keying an extension number provides instant loudspeaking communication between two parties.

### ***Two-way private conversation***

As an option the M100 station may be equipped with a handset to allow privacy or for ease of conversation in environments with extreme noise.

### ***Indirect call***

The caller may, for privacy reasons, place an indirect call which has to be accepted by the called party.

### ***Simplex conversation***

Conversation may be manually controlled from any master station by push-to-talk, release-to-listen operation of the SIMP button.

### ***Microphone blocking***

The microphone can be blocked during conversation by pressing the SIMP button. This places the station in listen mode.

### ***Automatic line release***

Incomplete dialling or calls to non-existent numbers or shorted lines will release number-unobtainable signal and be reset.

### ***Automatic queuing***

If both channels should be busy a call will enter queuing for up to 30 seconds and be automatically set up as soon as a speech channel becomes free.

### ***Wait-on-busy***

Calls to a busy station will be automatically connected if the busy station becomes free within 30 seconds.

### ***Break-in***

Enables a caller with an urgent message to interrupt an existing conversation. The other party will be placed in hold hearing a hold signal during the break-in conversation.

### ***Call-me***

If the called subscriber is not present the caller may leave a call-me information indicated by a flashing lamp. When the subscriber returns, the call is established by keying a code.

### ***Automatic transfer (patch option)***

Subscribers may instruct the system to transfer all incoming calls to any other station.

### ***Follow me***

Subscribers may instruct the system to transfer all incoming calls to the extension where they are presently located.

### ***Consult call***

During a normal two-way conversation a third party may be called for consultation, leaving the other party in hold.

### ***Call transfer***

A call may be transferred to a third party.

### ***Add-in conference***

A conference may be set up between any number of subscribers. The conference will be in simplex mode. Individual subscribers may withdraw from the conference.

### ***Secretarial filter and transfer***

A predefined executive station may route all incoming calls to a secretary for filtering. One executive/secretary pair is available in M100 S-16, two in M100 S-32.

### ***Group call***

Enables a one-way announcement to be given to predetermined groups of stations. Three groups are predefined.

### ***All call***

Enables a one-way announcement to be given to all extensions, i.e. for voice paging.

### ***Emergency call***

Enables a one-way emergency announcement to all extensions with priority over all other calls. A special emergency call tone is provided for distinction from normal calls.

### ***Public Address access***

The M100 system may be linked to one or more P.A. system(s) for making P.A. announcements from any M100 station. The link is provided by a P.A. coupler which can be connected to any of the S-16/32 lines.

### ***Programme distribution***

Each subscriber with a master station may listen to a distributed programme. Programme distribution will not interfere with normal use of the intercom system. The programme will be muted

during calls. The programme source is connected directly to the programme input socket of the M100 S-16.

### ***Priority station***

The system can be factory-configured to include a special line for one priority station. Calls from this station will overrule any other call in the system.

### ***Display function***

Display stations may be used for call identification purposes. Calls can be identified either by language, independent symbols or by alphanumeric display text depending on the exchange program. Note that text must be programmed by YOUR LOCAL PHILIPS DEALER.

### ***Gate/door control***

The M100 system provides secure control of entrance gates or doors. Door stations provide single button calls to one or two predetermined locations, whereupon the door may be opened by pressing a button during the conversation. Calls from the door stations may be automatically transferred to any master station, e.g. for night position.

Two lines are predefined for door operation in S-16 and four in S-32. Any M100 S single or dual call station may be used as a door station. For defining more than two lines for door operation, special substation programs are available. By using M100 display stations call identification can be obtained thereby identifying which door or gate is calling before answering.

### ***Function flexibility***

*The extensive M100 product range contains functions and accessories for a large number of problem-solving solutions.*

*For specific requirements YOUR LOCAL PHILIPS DEALER has a PC program for changing certain parameters in the exchange. Accordingly, some of the functions can be adapted to special needs before delivery. This application is described in the software section of this catalogue.*

# Exchange

## LBB 7111/00 S-16 Basic exchange



The S-16 Basic exchange is housed in a cabinet for wall mounting. Two connectors are provided for connecting a program source and for connection of a data line when two S-16 exchanges are interconnected.

The cabinet contains a mother board with the common exchange control circuitry, a termination board with screw terminals for connection of the line cabling, sockets for up to 8 line cards and an optional power distribution board if central powering is desired.

On the mother board there are switches for system functions: single or double digit selection, module number if two S-16s are interconnected, executive/secretary combination and door function.

<b>Capacities:</b>	
Subscribers/lines:	2-16
Line cards:	1-8
Speech channels:	2
Automatic queuing for free line (30 sec.):	All
Programme distribution channels:	1
Group call (predefined numbers):	3
All call:	1
Emergency call (from two stations only):	1
Call me:	All
Automatic transfer:	All
Follow me:	All
Add-in conference:	All
Executive/secretary pairs:	1

<b>Technical data:</b>	<b>LBB 7111/00</b>
------------------------	--------------------

<b>Dimensions (wxhxd) in mm/inch:</b>	
Exchange	234x396x96/9.2x16x3.8
Power Supply	120x155x42/4.7x6.1x1.7
<b>Weight in kg/lb:</b>	
Exchange (net)	2.1/4.6
Power Supply (net)	0.6/1.3
Starter pack (gross)	5.0/11
<b>Temperature range:</b>	0 to +50°C
<b>Relative humidity:</b>	15 to 90%
<b>Category:</b>	T1
<b>Protection provided by enclosure:</b>	IP 20
<b>Approval:</b>	CE
<b>Power consumption:</b>	
S-16 Basic exchange	230 V a.c., 45 VA max.
Power supply LBB 7102/18	36 V d.c., 1.7 A - EMC
<b>Mains voltage:</b>	
Output voltage	190 - 260 V a.c.
Max. load	36 V d.c. 1.7 A

## LBB 7111/16

### S-16 Start pack with 3 stations

In order to facilitate the first step towards installing an intercom system a complete start pack has been designed which includes all you need in order to install a complete system with three compact master stations. If more stations are desired these can be added by choosing from the extensive range of M100 Intercom stations available.

## LBB 7111/17

### S-16 Start pack with 8 stations

Identical to LBB 7111/16 but containing 8 compact master stations and a corresponding number of line cards, station cords and wall sockets, the latter based on the 6-pole Hirschmann concept.

## LBB 7111/18

### S-16 Start pack with 3 stations, snap-in

Identical to the LBB 7111/16 but station cords have snap-in connectors.

## LBB 7111/19

### S-16 Start pack display with 3 stations, snap-in

Identical to LBB 7111/16 but the exchange is equipped with display driver. One display station is included.

#### *Contents of LBB 7111/16 S-16 Start pack with 3 stations:*

1 x LBB 7111/00	S-16 Basic exchange
2 x LBB 7111/20	S-16 Line card for 2 stations
1 x LBB 7102/18	S-16 Power supply, 36 V/1.7 A - EMC
3 x LBB 7089/15	Compact master station
3 x LBB 7069/63	Station cord, 6-pole connector, 10 pack
3 x LBB 7069/08	Wall socket, 6-pole, 10 pack

Add two wire installation cabling, more line cards, wall sockets, stations and accessories as required.

#### *Contents of LBB 7111/19 S-16 Start pack Display with 3 stations, snap-in:*

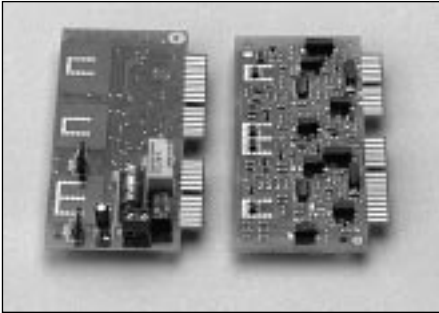
1 x LBB 7111/00	S-16 Basic exchange with built-in S-16 Display driver kit LBB 7111/51
2 x LBB 7111/20 *	S-16 Line card for 2 stations
1 x LBB 7102/18	S-16 Power supply, 36V/1.7 A - EMC
2 x LBB 7089/15	Compact master station
1 x LBB 7089/16	Compact master display station
3 x LBB 7069/63	Station cord, 6-pole connector, 10 pack

\* The display station requires two lines.

## Exchange accessories

The M100 S-16 basic exchange can be equipped in different ways in order to further extend system flexibility.

### **LBB 7111/20** **S-16 Line card for 2 stations**



For the connection of stations or P.A. couplers.

### **LBB 7111/22** **S-16 Line card for 1 station/ 1 loudspeaker**

For the connection of one station and one high power loudspeaker horn.

### **LBB 7102/18** **S-16 Power supply, 36 V/1.7 A - EMC**



For system powering, 36 V/1.7 A.

### **LBB 7111/32** **S-16 Power distribution board**



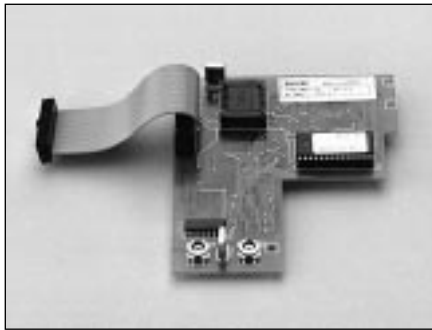
For central powering of station kits.

### **LBB 7111/50** **Interconnection kit, two S-16 exchanges**



Cables for interconnecting  
2 x M100 S-16 exchanges.

### **LBB 7111/51** **S-16 Display driver kit**



Necessary exchange material to allow connection of display stations. In a double S-16 system a kit must be installed in both cabinets if display stations are to be connected in both.

The special display program is delivered as a PROM chip which has to be plugged into the exchange replacing the standard program.

The display program caters for two display stations, two master stations and 10 substations.

All other functions remain unchanged.

Note that display stations need two line points, i.e. four wires from the exchange:

- one pair for station signal and power
- one pair for display signal and power

*Contents of S-16 Display driver kit,  
LBB 7111/51:*

1 x Display driver PCB

1 x LBB 7201/12 S-16 10 substations/  
2 master's display program

Mounting material

1 x Interconnection flat cable  
with plugs

The standard M100 S-16 has a comprehensive function range. In order to make the system more adaptable to special requirements alternative programs can be ordered. NB: These programs are delivered as PROM chips which have to be plugged into the exchange, replacing the standard program.

**LBB 7201/I0**  
**S-16 13 substations/  
2 masters program**

The basic M100 S-16 exchange caters for the connection of two substations. LBB 7201/10 program can be ordered to extend the number of substations to 13. All other functions remain as standard.

**LBB 7201/II**  
**S-16 8 substations/2 masters  
program**

Identical to LBB 7201/10 but to extend the number of substations to 8. All other functions remain as standard.

**LBB 7201/I2**  
**S-16 10 substations/2 masters  
display program**

NB: Included in typeno.: LBB 7111/51

Program for controlling the displayed information when the display station is idle, calling, being called or being called when busy. In order to avoid language problems the standard information displayed is made using symbols and digits.

**LBB 7201/I3**  
**S-16 3 substations/II masters  
display program**

Identical to LBB 7201/12 but with another sub to master station ratio.

**LBB 7201/30**  
**S-16 PC patch program**

For tailor-making the M100 S-16 system functions to specific demands YOUR LOCAL PHILIPS DEALER has a PC patch program at his disposal. With this program HE/SHE can adapt some of the parameters in the exchange to comply to special needs. With this S-16 PC patch program the following parameters can be changed:

- Emergency call table
- All call table
- Group call menu
- Emergency call start
- Substation routing
- Executive/secretary
- Priority station
- Display station
- Display text editor
- Include/remove functions



NB: When parameters have been changed the new function program will be delivered as a PROM chip which has to be plugged into the exchange, replacing the standard program.

**DISPLAY FUNCTIONS**

When using one or more display stations in the M100 S-16 system it is necessary to update the exchange.

**Station idle:**

# 12

**Station calling:**

→ 14

**Station being called:**

← 20

**Station being called when  
busy:**

→ 14 +

**Adding text:**

YOUR LOCAL PHILIPS DEALER can add text to each number by using the LBB 7201/30 S-16 PC patch program. In this way called or calling station identification can be made alphanumerically in your own language in a user-friendly way.

The space available on the display for text is the first 12 characters in the upper line which is freely programmable per system and the complete 16 characters in the lower line which is freely programmable per line (station).

Letters from A-Z, a number of symbols and the digits 0-9 are available for composing the text.

In addition 6 special letters per exchange can be selected from a menu in order to include specific letters in different languages.

# M100 S-72 Exchange Family Range

## Introduction



### Exchange configurations

The comprehensive range of exchanges available for Philips Intercom, Hospital and Prison communication systems is subdivided for easy selection, ordering and installation as follows:

**SB-80 Basic function exchange**

**S-72 to S-384 Stand-alone exchanges**

**SO-72 to SO-768 ODIN network exchanges**

All exchanges can be extended to any larger stand-alone or networked exchange by simple extension units and kits.

### M100 SB-80 Basic function exchange

The SB-80 exchange is designed to provide cost-effective handsfree internal communication in any system with capacity for up to 80 extensions.

The exchange supports the entire M100 S range of stations and accessories and is delivered as a complete stand-alone unit with cabinet and brackets for optional 19 inch rack mount included.

The basic function package includes all intrinsic and basic functions in addition to text functions for display

stations. The display can include numbers and symbols or language independent text. The default program may be changed by the system maintenance program.

The programme distribution supports 2 programme channels.

The SB-80 exchange can be extended to any other stand-alone or ODIN exchange by using simple extension units and kits.

### S-72 to S-384 Stand-alone exchanges

The stand-alone range of exchanges starts with a single module S-72 exchange for up to 72 extensions.

Modules in steps of 72/64 and line cards in steps of 8 can be added up to a total capacity of 384 extensions.

A full function package supports a large variety of functions for different operational segments.

An optional voice card may be added for voice mail and voice message applications.

Couplers can be connected for interfacing to radio paging, tieline or telephone applications.

The system maintenance is provided via an optional user-friendly PC program for Windows supporting on-site programming of system parameters and station display texts.

Dedicated PC programs are also available for Prison communication systems as well as for system surveillance and call monitoring in security applications.

The programme distribution supports up to 10 programme channels.

All exchanges may be expanded to any larger stand-alone or networked exchange by implementing simple extension units and kits.

### SO-72 to SO-768 ODIN network exchanges

The Optical Digital Information Network (ODIN) system is designed for building systems with capacity for more than 10 000 extensions as well as providing distributed exchange structure. A range of ODIN exchanges starts with SO-72 for up to 72 extensions and escalates up to SO-768 for direct connection to an ODIN controller. Functions and options are similar to that of the stand-alone S-72 exchange range.

ODIN utilizes distribution of digital audio and data through 2 optical fibres that can be run up to 1.5 km without repeaters. Each branch has a capacity for 30 channels digital audio and data.

Optical drivers may be delivered on special request for lengths up to 10 km. SO exchanges can be connected with the ODIN controller via an optical data driver master card located in the controller. The ODIN controller has capacity for interconnecting up to 8 SO exchanges.

If there is a need for more exchanges a sub-controller can be connected to the main ODIN controller.

Subcontrollers can be connected in cascade configuration up to a total capacity of more than 10 000 extensions in the system.

### Intrinsic functions (SB, S and SO)

#### *Two-way handsfree conversation*

Keying an extension number provides instant loudspeaking communication between two parties.

#### *Two-way private conversation*

Most M100 S stations may be equipped with a handset to allow privacy or for ease of conversation in environments with high noise level.

#### *Simplex conversation*

Conversation may be manually controlled from any calling master station by «push-to-talk», «release-to-listen» operation of the SIMP button.

#### *Microphone blocking*

The microphone can be blocked during conversation by touching the «SIMP» button. This places the station in listening mode.

#### *Wait-on-busy*

Calls to a busy station will be automatically connected if the busy station becomes free within 30 seconds.

### Basic functions (SB, S and SO)

#### *Call me (lamp indication)*

If the called subscriber is absent, the caller may leave a call-me information in the form of a flashing pilot lamp.

When the subscriber returns, the call is established by keying a code.

#### *Automatic recall*

When calling a busy station the caller may request automatic recall as soon as both extensions become free.

#### *Break in*

Enables a caller with an urgent message to interrupt an existing conversation.

#### *Three-way conference*

A three-way duplex conference may be established between any three extensions.

#### *Consult call*

During normal two-way conversation a third party may be called for consultation, leaving the other party in hold.

#### *Follow me*

Subscribers may instruct the system to transfer all incoming calls to the extension where they are presently located.

#### *Group call with reply*

Enables a one-way announcement to be given to predetermined groups of stations.

(Standard 8 groups, optional 80).

Ongoing conversations will be re-established automatically when the group call is finished.

Within a defined period of time the initiator may be called from any extension by keying a code.

#### *All call with reply*

Enables a one-way announcement to be given to all extensions, i.e. for voice paging with priority over group call. Otherwise the same as group call.

#### *Emergency call*

Enables a one-way emergency announcement to be given to all extensions with priority over all other calls.

A special emergency call tone differentiates from normal call tone.

Ongoing conversation will not be re-established.

#### *Loudspeaker connection*

Horn loudspeakers may be called like any other extension for "press-to-talk", "release-to-listen" operation when special line cards are installed.

#### *Programme distribution*

Each subscriber with a master station has the choice of accessing programme channels.

Single, dual or special stations may also be set up to receive the programme channels.

The number of programmes varies from 1 to 10 depending on system configuration.

#### *Substation with door opening*

Any extension may be programmed to accept single button calls to maximum 9 predetermined extensions in indirect or direct mode with automatic time-out.

#### *Direct call*

Each subscriber line may programme up to 9 different one digit calls, direct or indirect mode.

#### *Display functions*

All extension lines can be enabled for connection of LCD display stations for call identification.

The calls will, in default mode, be identified by language-independent symbols.

Customer-defined alphanumeric display text may be programmed via the system maintenance PC.

### Extended functions (S and SO)

#### *Call transfer*

A call may be transferred to a third party.

#### *Executive/secretary*

A predefined executive station may route all incoming calls to a secretary for filtering.

#### *Executive/secretary, always*

Enables the system operator to lock secretary filtering for a predefined exec./secr. pair.

#### *Transfer always*

Enables the system operator to route and lock incoming calls to another extension.

#### *Transfer-on-busy*

Enables the system operator to route and lock incoming calls to another extension when the called station is busy.

## Function description

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### *Group hunt*

Subscribers may be programmed to be a member of a group hunt table.

Calls to subscribers programmed in the group hunt table need acceptance of the receiving party.

Calls not answered within a preset time will be forwarded to the next subscriber.

### **Speech**

(optional by LBB 7103/48)

### *Voice mail*

A subscriber may leave a spoken message to any other subscriber. The electronically stored message will be heard by the receiving party at any time.

### *Personal message*

A subscriber may leave a spoken message on own station. The electronically stored message will be heard by all calling parties.

### *Absence message*

The system may be instructed to pass on absence messages in verbal form for absentee subscribers, notifying the caller that the subscriber is absent, where he is and when he will be back. An absence message is selectable from a pre-recorded menu.

### *Call-me message*

If the called party is not present a message may be left notifying the subscriber to call back. Call-back messages are indicated by flashing pilot lamp on the station.

### *Time call*

Time of the day will be given when keying appropriate code from the station keyboard.

### *Number identification*

Any subscriber may check own extension number by keying appropriate code from the station keyboard thereupon receiving a verbal message.

### **Nurse call segment functions**

#### *Nurse desk*

Any station may be programmed to function as a nurse desk in a nurse call system. When using a display station the system may be set-up to display the calling ward, room and bed number.

#### *Bedside stations*

Any station may be setup as bedside stations and room stations in a nurse call system.

### **Security segment functions**

#### *Guard desk*

Display station setup as guard desk with the possibility of receiving call requests from door/alarm stations in a queue.

The operator can freely select to answer the desired calling station by scrolling the LCD display.

#### *Door/alarm station*

Extension line configured to support single/dual call type station making call requests to a guard desk.

Appropriate text will be generated on corresponding guard desk.

#### *Music on hold for door/alarm station*

A door/alarm station will automatically be switched to a programme distribution channel after initiation of a call request.

When no source is connected to the programme channel, only pilot lamp will be lit. On response and reset of the call request the door/alarm station will revert to idle mode.

### **System maintenance**

System maintenance PC program for Windows 3.11/W95 Maintenance PC program provides on-line adjustment of the following parameters:

- Floating numbers (1-6 digits)
- Display text corresponding to each subscriber line
- Allocation of functions per subscriber line
- Programming of substations
- Coupler programming
- Storage and printing of all tables
- General system parameters:
  - . Timer settings for various functions
  - . Application specific programming
  - . Nurse call and security system setup.

### **Coupler interfaces**

#### *Tieline coupler*

Opto or serial interface for inter-connecting M100 S to M100 S systems and M100 S previously delivered M100 P systems via public telephone lines.

#### *Telephone coupler*

Opto or serial interface for connection to internal or public telephone network dial-in or dial-out to/from intercom.

#### *Paging interface*

Opto interface for connection of DP6000 or similar paging system for on-site display paging.

#### *PC call information protocol*

Serial communication with PC for use of standard or customized monitor programs.

The programs may be used actively in security applications or as logging for records.

*Please note that if functions outside shaded area are required in SB-80, the exchange must be upgraded.*



## Standard software function packages

	<i>LBB 7216/11 SB-80</i>	<i>LBB 7216/22 S-72</i>	<i>LBB 7216/82 SO-72</i>
<b><i>Intrinsic functions</i></b>			
Two-way handsfree conversation	+	+	+
Two-way private conversation	+	+	+
Simplex operation	+	+	+
Microphone blocking	+	+	+
Wait-on-busy	+	+	+
Automatic queuing	+	+	+
<b><i>Basic functions</i></b>			
Call me (flashing lamp)	+	+	-
Automatic recall	+	+	+
Break in	+	+	+
Three-way conferance	+	+	-
Add-in conferance	+	-	-
Follow me	+	+	+
Group call	+3)	+3)	+3)
All call	+3)	+3)	+3)
Emergency call	+	+	+
Loudspeaker connection	+1)	+1)	+1)
Programme distribution channels	2	10	10
Substation w/door opening	+	+	+
Direct call	+	+	+
Priority station	-	-	-
<b><i>Extended functions</i></b>			
Transfer on busy	-	+	+
Transfer always	-	+	+
Group hunt	-	+	+
Consult call and transfer	-	+	-
Executive/secretary	-	+	-
Executive/secretary always	-	+	-
<b><i>Display functions</i></b>			
Symbols	+	+	+
Text	#	#	#
<b><i>Special segment functions</i></b>			
PAN Nurse desk w/display	-	+	+
PAN Bedside stations	-	+	+
Guard desk w/display	-	+	+
Door/alarm station	-	+	+
Music on hold for door/alarm station	-	+	+
<b><i>System parameters</i></b>			
Patchable	-	-	-
PC system maintenance	+	+	+
<b><i>Synthetic voice services</i></b>			
Absence & Call me messages	-	⌘	⌘
Time call & Number identification	-	⌘	⌘
Voice mail & Personal messages	-	⌘	⌘
<b><i>Interface</i></b>			
PC	+	+	+
Paging (DP6000)	-	+	+
Tieline coupler	-	+	+
Telephone coupler	-	+	+
Public Address	-	+	+

- 1) With special line card
- 2) With special SW program
- 3) With reply

- § Patchable  
 # PC system maintenance  
 ⌘ Voice board LBB 7103/48 installed

- + Included  
 - Not possible

# How to build a complete exchange

---

In order to build a complete Intercom, Hospital or Prison communication system the following steps must be considered depending on the application:

## 1. Select exchange type

Select any exchange by typenumber according to requirements for functions, number of stations and network:

- SB-80 Basic function exchange for standard applications (page 43)
- S-72 to S-384 Stand-alone exchange (page 44-45)
- SO-72 to SO-768 ODIN network exchange (page 46-49)

## 2. Select Line cards (page 53)

Select type and number of line cards:

- Line card, 8 stations
- Line card, 6 stations 2 loudspeaker points
- Line cards, 8 loudspeaker points
- Line card 6 stations, 2 couplers
- Open line check

## 3. Select line termination type (page 53)

All incoming lines from connected station and terminals have to be terminated at the exchange.

- Line termination unit for up to 80 intercom extensions
- Line termination panel mounted at the rear of the exchange with line termination cables, each cable for connecting 16 2-wire extensions

## 4. Voice board (page 53)

Select voice options:

- Voice card for pre-recorded messages and optional voice mail (requires RAM chip OC type)

- Requires one ACIA card in all ODIN exchanges

## 5. Connection of PCs (page 54)

Select PC interface for the PC:

- VDU termination opto interface
- PC opto interface card for plastic fibre (max. 30 m)
- PC opto interface card for glass fibre (max. 1.5 km)
- Opto cable, plastic fibre (max. 30 m)

## 6. PC programs (page 59-60)

Select type of PC programs.

- PC system maintenance program for Windows
- Basic call monitor program (not for SB-80)

## 7. Couplers (page 55)

For interfacing to selective radio, paging, tieline or telephones.

## 8. ODIN network (page 56-57)

SO exchanges used in an ODIN-network require an ODIN controller.

## Expanding installed exchanges (page 51-52)

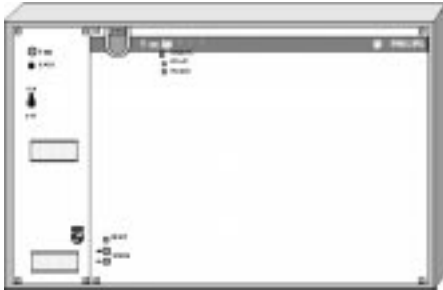
Select upgrade/expansion unit or kit:

- S-72 Sub-exchange
- S-64 Sub-exchange
- SB-80/S-72 Function upgrade kit
- SB-80/SO-72 Function upgrade kit
- S/SO Function upgrade kit
- 216/256 Expansion kit
- SO-320/SO-384 Expansion kit

*For detailed information see relevant chapter in this system description.*

# MI00 SB-80 Basic function exchange

## LBB 7112/00 SB-80 Exchange



### Included in LBB 7112/00:

- LBB 7102/93 S-64 Power Supply supporting all required internal voltages and line voltage for 80 extensions. 36 V/2 A is available for power distribution to kits and display stations.
- LBB 7110/13 FC card supports the included functions, the display driver and 2 channel programme distribution or 1 channel distribution and 1 channel conference
- LBB 7105/95 Line termination unit terminates 80 2-wire extension lines as well as 80 2-wire power distribution lines.

SB-80 is a complete, basic functions stand-alone exchange. (Functions as described in shaded areas on page 39).  
SB-80 can be upgraded to any S-72 or SO-72 exchange by expansion units or upgrade kits.

### Special function for SB-80

*Add-in conference with up to 32 participants:*  
(Occupies programme distribution channel 2).

A simplex conference may be established from one controlling party, including up to 32 participants.

Each participant's voice is heard by pressing the "SIMP" button.

When used in conjunction with display stations the name of the speaker will be shown on all display panels.

*Pre-defined conference groups:*  
Up to 5 different groups for conference can be pre-defined in the system maintenance program.

## LBB 7109/26 SB-80 Programming kit

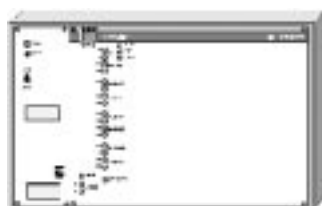
### Consisting of:

LBB 7109/21	VDU terminal opto interface
LBB 7215/22	PC System maintenance program for Windows
LBB 7103/61	Opto cable, 4 metres

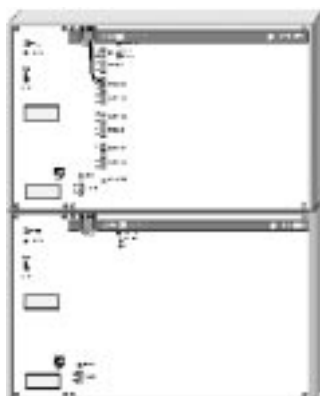
Technical data	LBB 7112/00
<i>Supply voltage from mains, strapable:</i>	90-190/180-264 V a.c.
<i>Power consumption, from mains, typical/max.:</i>	160/230 VA
<i>Dimensions in mm/inch:</i>	
Width	442/17.4
Depth	310/12.20 ex. handsets and terminals
Height	266/10.47
<i>Net weight (kg/lb) approx.:</i>	8/18
<i>Cabinet construction:</i>	Aluminium 19" boxed sub frame
<i>Mounting:</i>	
Table top	Rubber feet
19 inch rack mount	Optional mounting brackets included
<i>Speech channels:</i>	6 internal
<i>Extensions and line terminations:</i>	80 extensions, 4-wire
<i>Programme distribution channels:</i>	2
<i>Floating number capacity:</i>	Initially fixed to numbers 10-89
<i>Automatic recall capacity:</i>	16
<i>Call-me capacity:</i>	80

## MI00 Stand-alone exchanges

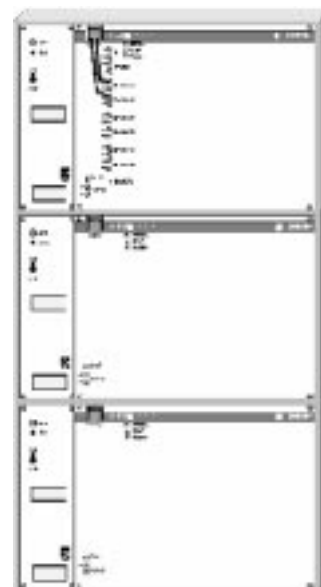
**LBB 7112/01  
S-72 Exchange**



**LBB 7112/02  
S-144 Exchange**



**LBB 7112/03  
S-216 Exchange**



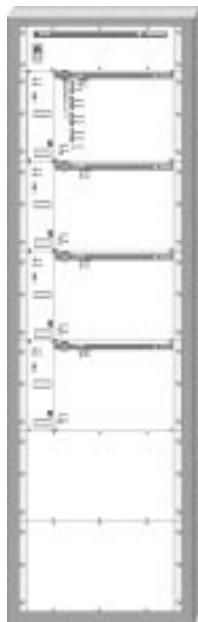
Technical data	7112/01, S-72	7112/02, S-144	7112/03, S-216
Supply voltage, strappable (V a.c.):	90-190/180-264	90-190/180-264	90-190/180-264
Power consumption from mains, typical/max. (VA):	165/210	325/410	485/610
Dimensions in mm/in.:			
Width	442/17.40	442/17.40	442/17.40
Depth	310/12.20 a)	310/12.20 a)	310/12.20 a)
Height	266/10.47 (6U)	532/20.94 (12U)	798/31.42 (18U)
Net weight (kg/lb) approx.:	10/23.76	20/44	30/66
Cabinet construction:	19" Aluminium sub-frame	19" Aluminium sub-frames	19" Aluminium sub-frames
Mounting:			
19 inch rack mount	option	option	option
Exchange capacities:			
Internal speech channels	7	2 x 7	3 x 7
Audio channels between modules		8	8
Extensions	72	144	216
Programme distr. channels, max.	10	10	10
List number capacity	up to 72 numbers 2 - 6 digits	up to 144 numbers 2 - 6 digits	up to 216 numbers 2 - 6 digits
Automatic recall capacity	32	32	32
Call-me capacity	50	50	50
Functional capacity:			
FC card	standard	standard	standard
6U computer card	standard	standard	standard
Voice card	option	option	option
ODIN node	NA	NA	NA
LCD display driver capacity:	1 channel	2 channels	3 channels
Peripheral equipment:	PC, tieline and paging	PC, tieline and paging	PC, tieline and paging
Function package b):	LBB 7216/22	LBB 7216/22	LBB 7216/22

a) Excluding handles in the front and terminals in the rear.

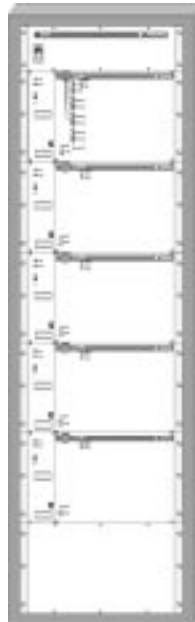
b) Special function packages can be delivered upon request.

## MI00 S-72 Stand-alone exchanges

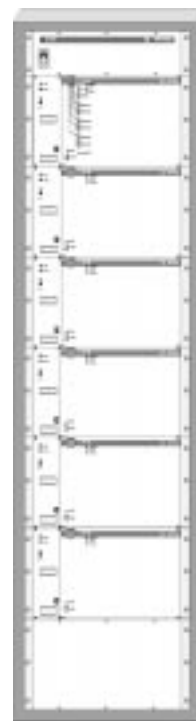
**LBB 7112/04  
S-256 Exchange**



**LBB 7112/05  
S-320 Exchange**



**LBB 7112/06  
S-384 Exchange**

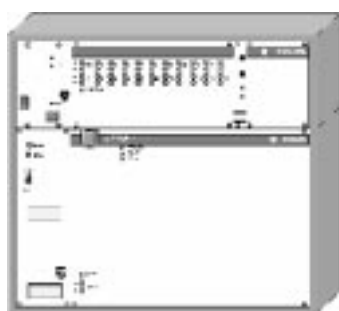


<i>Technical data</i>	<i>7112/04, S-256</i>	<i>7112/05, S-320</i>	<i>7112/06, S-384</i>
<i>Supply voltage, strappable (V a.c.):</i>	90-190/180-264	90-190/180-264	90-190/180-264
<i>Power consumption from mains, typical/max. (VA):</i>	645/810	805/1010	965/1210
<i>Dimensions in mm/in.:</i>			
Width	577/22.72	577/22.72	577/22.72
Depth	574/22.60	574/22.60	574/22.60
Height	1875/73.82 (39U)	1875/73.82 (39U)	2141/84.29 (45U)
<i>Net weight (kg/lb) approx inclusive cabinet:</i>	165/360	175/385	200/440
<i>Cabinet construction:</i>	19" Aluminium sub-frames	19" Aluminium sub-frames	19" Aluminium sub-frames
<i>Mounting:</i>			
19 inch rack mount	standard	standard	standard
<i>Exchange capacities:</i>			
Internal speech channels	4 x 7	5 x 7	6 x 7
Audio channels between modules	16	16	16
Extensions	256	320	384
Programme distr. channels, max.	10	10	10
List number capacity	up to 256 numbers 2 - 6 digits	up to 320 numbers 2 - 6 digits	up to 384 numbers 2 - 6 digits
Automatic recall capacity	32	32	32
Call-me capacity	50	50	50
<i>Functional capacity:</i>			
FC card	standard	standard	standard
6U computer card	standard	standard	standard
Voice card	option	option	option
ODIN node	NA	NA	NA
<i>LCD display driver capacity:</i>	4 channels	5 channels	6 channels
<i>Peripheral equipment:</i>	PC, tieline and paging	PC, tieline and paging	PC, tieline and paging
<i>Function package a):</i>	LBB 7216/22	LBB 7216/22	LBB 7216/22

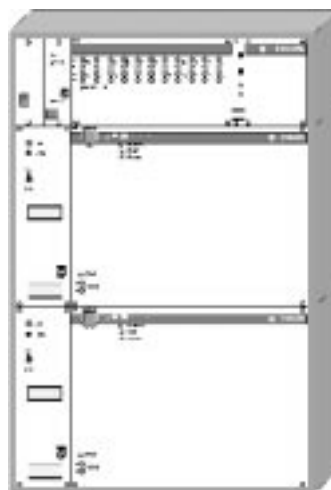
a) Special function packages can be delivered upon request.

## MI00 SO-72 ODIN Network exchanges

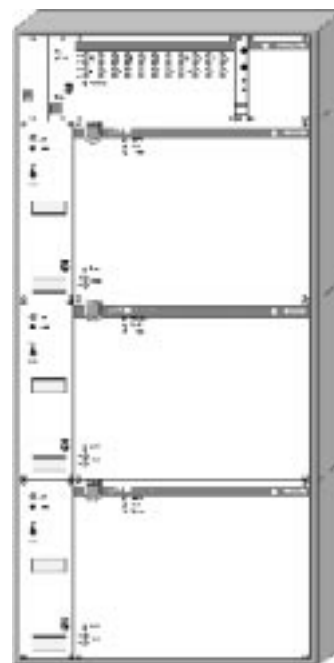
**LBB 7112/11  
SO-72 Exchange**



**LBB 7112/12  
SO-144 Exchange**



**LBB 7112/13  
SO-216 Exchange**



Technical data	7112/11, SO-72	7112/12, SO-144	7112/13, SO-216
Supply voltage, strappable (V a.c.):	90-190/180-264	90-190/180-264	90-190/180-264
Power consumption from mains, typical/max. (VA):	165/210	325/410	485/610
Dimensions in mm/in.:			
Width	442/17.40	442/17.40	442/17.40
Depth	310/12.20 a)	310/12.20 a)	310/12.20 a)
Height	400/15.75 (9U)	666/26.22 (15U)	932/36.69 (21U)
Net weight (kg/lb) approx:	16/35.2	26/57.2	36/79.2
Cabinet construction:	19" Aluminium sub-frames	19" Aluminium sub-frames	19" Aluminium sub-frames
Mounting:			
19 inch rack mount	option	option	option
Exchange capacities:			
Internal speech channels	7	2 x 7	3 x 7
Audio channels between modules		8	8
Extensions	72	144	216
Programme distr. channels, max.	10	10	10
List number capacity	up to 72 numbers 2 - 6 digits	up to 144 numbers 2 - 6 digits	up to 216 numbers 2 - 6 digits
Automatic recall capacity	32	32	32
Call-me capacity	50	50	50
Functional capacity:			
FC card	standard	standard	standard
6U computer card	standard	standard	standard
Voice card	option	option	option
ODIN node	standard	standard	standard
LCD display driver capacity:	1 channel	2 channels	3 channels
Peripheral equipment:	PC, tieline and paging	PC, tieline and paging	PC, tieline and paging
Function package b):	LBB 7216/82	LBB 7216/82	LBB 7216/82

a) Excluding handles in the front and terminals in the rear.

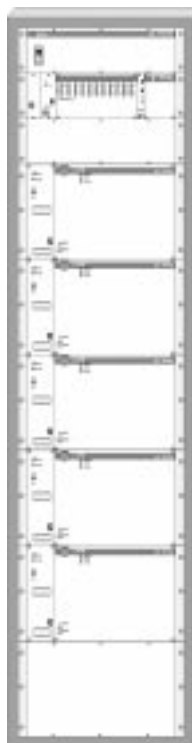
b) Special function packages can be delivered upon request.

# MI00 SO-72 ODIN Network exchanges

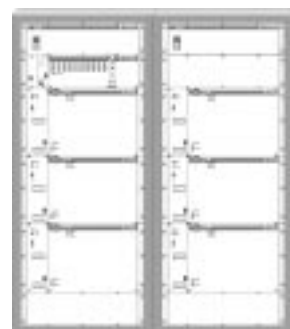
**LBB 7112/14  
SO-256 Exchange**



**LBB 7112/15  
SO-320 Exchange**



**LBB 7112/16  
SO-384 Exchange**



Technical data	7112/14, SO-256	7112/15, SO-320	7112/16, SO-384
Supply voltage, strappable (V a.c.):	90-190/180-264	90-190/180-264	90-190/180-264
Power consumption from mains, typical/max. (VA):	645/810	805/1010	965/1210
Dimensions in mm/in.:			
Width	577/22.72	577/22.72	2 x 577/22.72
Depth	574/22.60	574/22.60	574/22.60
Height	1875/73.82 (39U)	2141/84.29 (45U)	1342/52.83 (2 x 27U)
Net weight (kg/lb) approximately, inclusive cabinet:	170/375	200/440	270/595
Cabinet construction:	19" Aluminium sub-frames	19" Aluminium sub-frames	19" Aluminium sub-frames
Mounting:			
19 inch rack mount	standard	standard	standard
Exchange capacities:			
Internal speech channels	4 x 7	5 x 7	6 x 7
Audio channels between modules	16	16	16
Extensions	256	320	384
Programme distr. channels, max.	10	10	10
List number capacity	up to 256 numbers 2 - 6 digits	up to 320 numbers 2 - 6 digits	up to 384 numbers 2 - 6 digits
Automatic recall capacity	32	32	32
Call-me capacity	50	50	50
Functional capacity:			
FC card	standard	standard	standard
6U computer card	standard	standard	standard
Voice card	option	option	option
ODIN node	standard	standard	standard
LCD display driver capacity:	4 channels	5 channels	6 channels
Peripheral equipment:	PC, tieline and paging	PC, tieline and paging	PC, tieline and paging
Function package a):	LBB 7216/82	LBB 7216/82	LBB 7216/82

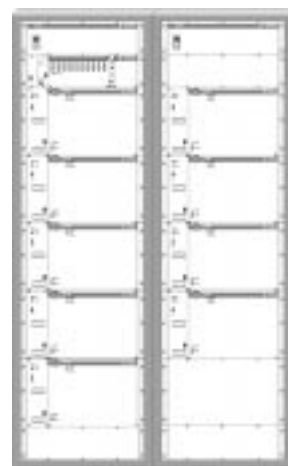
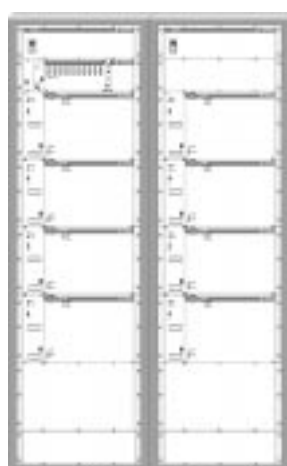
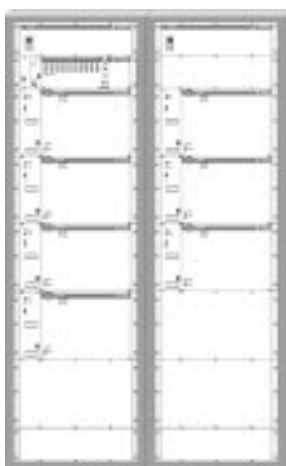
a) Special function packages can be delivered upon request.

## MI00 SO-72 ODIN Network exchanges

### LBB 7112/17 SO-448 Exchange

### LBB 7112/18 SO-512 Exchange

### LBB 7112/19 SO-576 Exchange



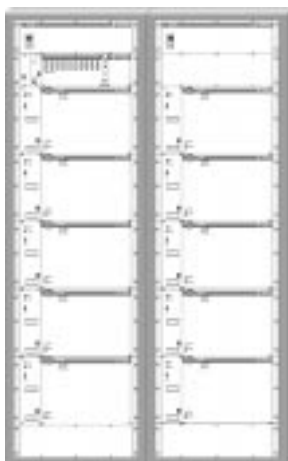
Technical data	7112/17, SO-448	7112/18, SO-512	7112/19, SO-576
Supply voltage, strappable (V a.c.):	90-190/180-264	90-190/180-264	90-190/180-264
Power consumption from mains, typical/max. (VA):	1125/1410	1285/1610	1445/1810
Dimensions in mm/in.:			
Width	2 x 577/22.72	2 x 577/22.72	2 x 577/22.72
Depth	574/22.60	574/22.60	574/22.60
Height	2 x 1875/73.82 (2 x 39U)	2 x 1875/73.82 (2 x 39U)	2 x 1875/73.82 (2 x 39U)
Net weight (kg/lb) approximately, inclusive cabinet:	325/715	337/740	345/760
Cabinet construction:	19" Aluminium sub-frames	19" Aluminium sub-frames	19" Aluminium sub-frames
Mounting:			
19 inch rack mount	standard	standard	standard
Exchange capacities:			
Internal speech channels	7 x 7	8 x 7	9 x 7
Audio channels between modules	16	16	16
Extensions	448	512	576
Programme distr. channels, max.	10	10	10
List number capacity	up to 448 numbers 2 - 6 digits	up to 512 numbers 2 - 6 digits	up to 576 numbers 2 - 6 digits
Automatic recall capacity	32	32	32
Call-me capacity	50	50	50
Functional capacity:			
FC card	standard	standard	standard
6U computer card	standard	standard	standard
Voice card	option	option	option
ODIN node	standard	standard	standard
LCD display driver capacity:	7 channels	8 channels	9 channels
Peripheral equipment:	PC, tieline and paging	PC, tieline and paging	PC, tieline and paging
Function package a):	LBB 7216/82	LBB 7216/82	LBB 7216/82

a) Special function packages can be delivered upon request.

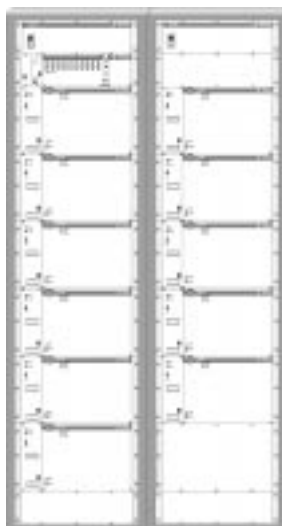


## MI00 SO-72 ODIN Network exchanges

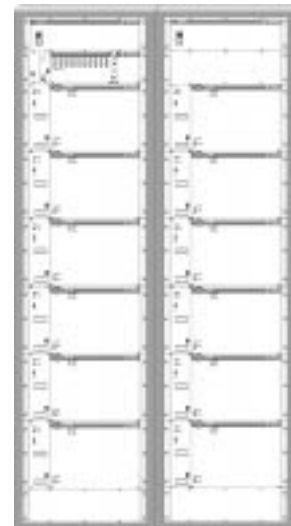
**LBB 7112/20  
SO-640 Exchange**



**LBB 7112/21  
SO-704 Exchange**



**LBB 7112/22  
SO-768 Exchange**



Technical data	7112/20, SO-640	7112/21, SO-704	7112/22, SO-768
<i>Supply voltage, strappable (V a.c.):</i>	90-190/180-264	90-190/180-264	90-190/180-264
<i>Power consumption from mains, typical/max. (VA):</i>	1605/2010	1765/2210	1925/2410
<i>Dimensions in mm/in.:</i>			
Width	2 x 577/22.72	2 x 577/22.72	2 x 577/22.72
Depth	574/22.60	574/22.60	574/22.60
Height	2 x 1875/73.82 (2 x 39U)	2 x 2141/84.29 (2 x 45U)	2 x 2141/84.29 (2 x 45U)
<i>Net weight (kg/lb) approximately, inclusive cabinet:</i>	355/780	400/880	410/900
<i>Cabinet construction:</i>	19" Aluminium sub-frames	19" Aluminium sub-frames	19" Aluminium sub-frames
<i>Mounting:</i>			
19 inch rack mount	standard	standard	standard
<i>Exchange capacities:</i>			
Internal speech channels	10 x 7	11 x 7	12 x 7
Audio channels between modules	16	16	16
Extensions	640	704	768
Programme distr. channels, max.	10	10	10
List number capacity	up to 640 numbers 2 - 6 digits	up to 704 numbers 2 - 6 digits	up to 768 numbers 2 - 6 digits
Automatic recall capacity	32	32	32
Call-me capacity	50	50	50
<i>Functional capacity:</i>			
FC card	standard	standard	standard
6U computer card	standard	standard	standard
Voice card	option	option	option
ODIN node	standard	standard	standard
<i>LCD display driver capacity:</i>	10 channels	11 channels	12 channels
<i>Peripheral equipment:</i>	PC, tieline and paging	PC, tieline and paging	PC, tieline and paging
<i>Function package a):</i>	LBB 7216/82	LBB 7216/82	LBB 7216/82

a) Special function packages can be delivered upon request.

# Exchange expansion units and kits

## Expanding the exchange

Any exchange within the M100 S range can be expanded by using expansion units and kits.

The following types of expansion possibilities are available within the exchange family:

- S-80 Basic function exchange to any Stand-alone exchange
- S-80 Basic function exchange to any ODIN exchange
- Any Stand-alone exchange to a larger Stand-alone exchange
- Any Stand-alone exchange to any ODIN exchange
- Any ODIN exchange to a larger ODIN exchange

For these purposes there are two expansion units and five upgrade kits given single typenumbers for easy ordering:

**LBB 7112/08**

S-72 Sub exchange

**LBB 7112/09**

S-64 Sub exchange

**LBB 7112/30**

SB-80/S-72 Function upgrade kit

**LBB 7112/31**

SB-80/SO-72 ODIN function upgrade kit

**LBB 7112/32**

S-72/SO-72 ODIN function upgrade kit

**LBB 7112/33**

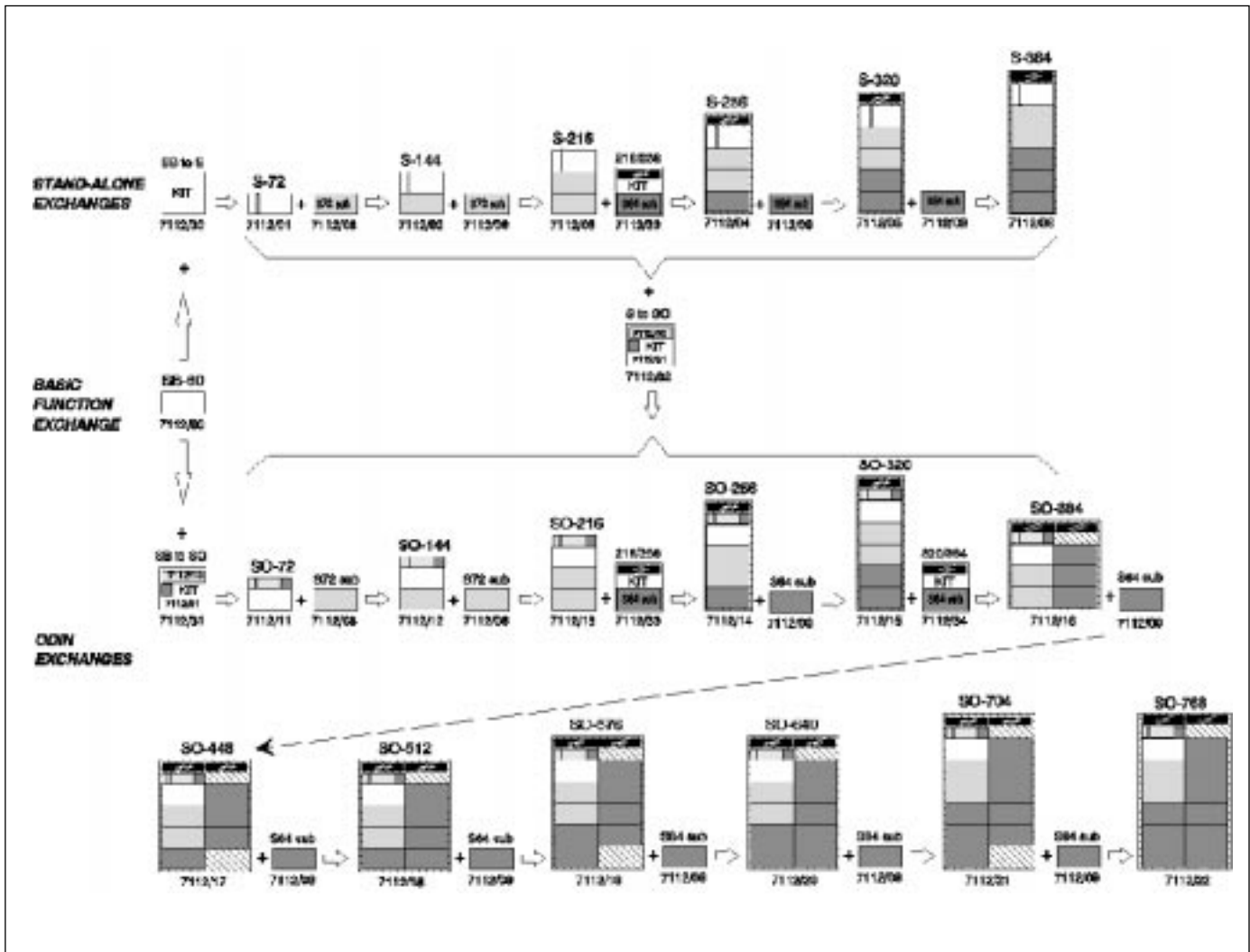
S-216/S-256 Stand-alone exchange extension kit

**LBB 7112/34**

SO-320/SO-384 ODIN exchange extension kit

Line cards, interface (ACIA) cards and termination units are additional orders according to size and configuration.

## Upgrade by kits and modules



## Exchange expansion units and kits

### Stand-alone and ODIN exchange expansion units

S-72  
S-144  
SO-72  
SO-144

+



LBB 7112/08

→

S-144  
S-216  
SO-144  
SO-216

*LBB 7112/08 S-72 Sub exchange with 72 line extension capacity*

S-216  
S-256  
S-320  
SO-216  
SO-256  
SO-320  
SO-384  
SO-448  
SO-512  
SO-576  
SO-640  
SO-704  
SO-768

+



LBB 7112/09

→

S-256  
S-320  
S-384  
SO-256  
SO-320  
SO-384  
SO-448  
SO-512  
SO-576  
SO-640  
SO-704  
SO-768

*LBB 7112/09 S-64 Sub exchange with 64 line extension capacity*

### Stand-alone and ODIN exchange upgrade kits

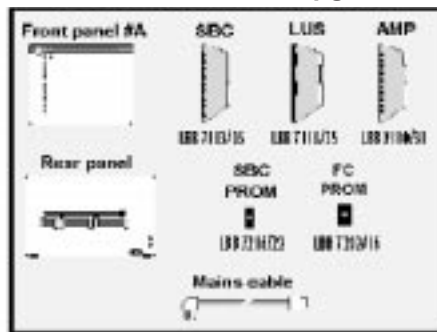
#### SB-80 ODIN Function upgrade kit

**BASIC  
EXCHANGE**



LBB 7112/00

+



LBB 7112/30

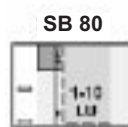
**STAND-ALONE  
EXCHANGE**



LBB 7112/01

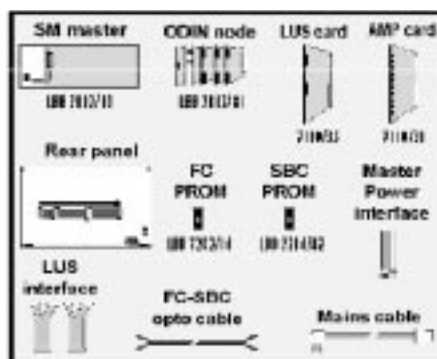
#### SB-80/SO-72 ODIN Function upgrade kit

**BASIC  
EXCHANGE**



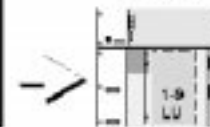
LBB 7112/00

+



LBB 7112/31

**ODIN  
EXCHANGE**



LBB 7112/11

## Exchange expansion units and kits

### S-72/SO-72 ODIN function upgrade kit

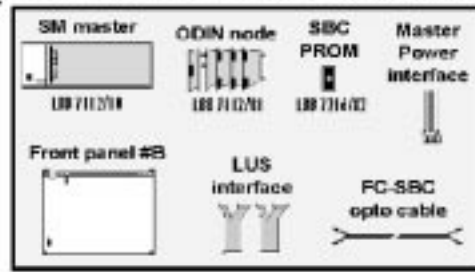
**STAND-ALONE  
EXCHANGES**

**ODIN  
EXCHANGES**

**S-72...384**



LBB 7112/01.../06



LBB 7112/32



**SO-72...384**

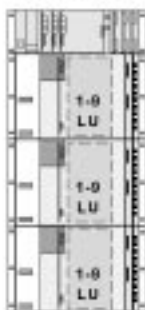


LBB 7112/11.../16

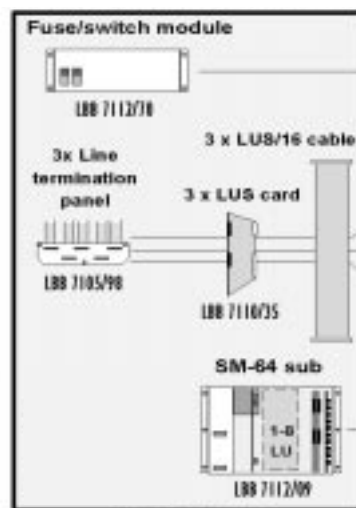
### S-216/S-256 Stand-alone exchange expansion kit

**S-256  
SO-256**

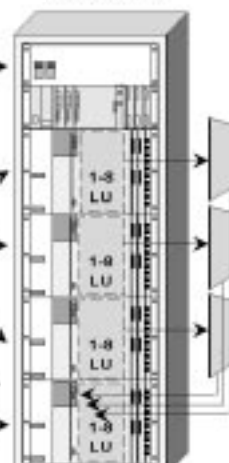
**S-216  
SO-216**



LBB 7112/03  
LBB 7112/13

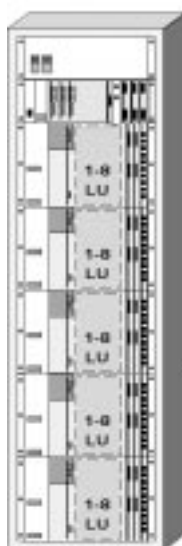


LBB 7112/33

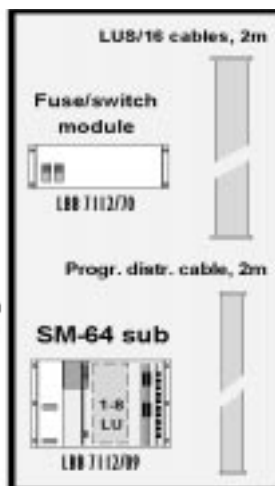


LBB 7112/04  
LBB 7112/14

**SO-320**



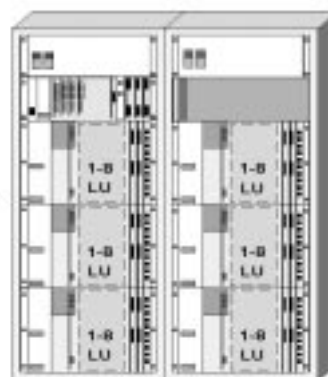
LBB 7112/15



LBB 7112/34



**SO-384**



LBB 7112/16

- Add line card as appropriate.
- Add ACIA card LBB 7103/58 according to configuration, one card serves two modules.
- Add cabinet rack.

## Line termination equipment, voice board and line cards

### LBB 7105/95

#### Line termination unit



The LBB 7105/95 is fully equipped for termination of up to 80 4-wire extensions.

2-wires are terminated as intercom lines to the M100 S exchange and 2-wires support distribution of power for display stations and bedside stations as well as other applications requiring separate powering.

The cabinet is finished in light grey ABS plastic mounted on a metal frame.

**Dimensions (wxhxd):** 269x195x74 mm  
10.59x7.68x2.9 in.

**Capacity:** 80 x 4 wires

**Mounting:** On wall with screws

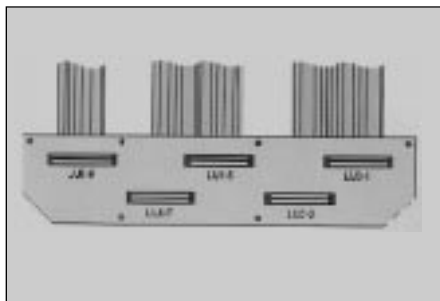
**Length of cables:** 6 m/236.2 in.

**Termination block**

**support:** LAC 6 - 8 mm/0.24-0.31 in.

### LBB 7105/98

#### Line termination panel



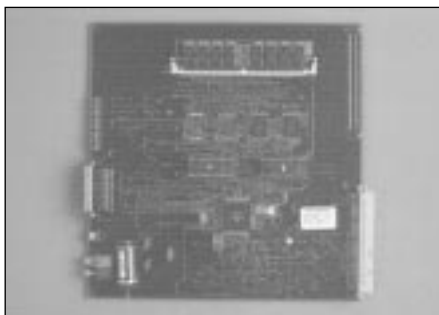
### LINE CARDS



### VOICE BOARD

#### LBB 7103/48

##### Voice board



- Can be mounted in all S and SO exchanges
- Can record and play back audio information
- Is used for voice mail
- Contains a menu of fixed voice messages
- Can be adapted for any language

#### LBB 7110/29

**Line card, 6 stations/  
2 simplex relay loudspeakers**

#### LBB 7110/30

**Line card, 8 stations,  
10 programmes**

#### LBB 7110/39

**Line card, 10 programmes,  
6 stations/2 coupler lines**

#### LBB 7110/40

**Line card, 8 simplex relay  
loudspeakers**

#### LBB 7110/45

**Line card, 8 stations,  
10 programme channels/  
open line check**

#### LBB 7110/47

**Line card, 6 stations/  
2 coupler lines, open line  
check**

### LBB 7105/97

#### Line termination cable, 16 lines



Cable length: 8 m

## Data interface and interconnection equipment

### **LBB 7109/21 VDU terminal opto interface**



Optical interface for connection of portable PC to M100 S-72 exchanges at a maximum distance of 30 m.

Supports both 25 and 9-pin PC serial port. 5 V mains adapter included.

### **LBB 7103/61 OPTO cable, 4 metres**

Optical cable for use with LBB 7109/21 VDU terminal opto interface.

Can be ordered to alternative lengths on a project basis.

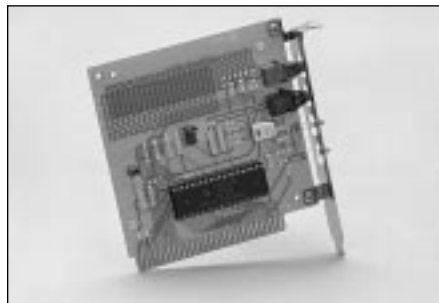
### **LBB 7103/62 Serial interface cable, 4 metres**

Cable for connection of equipment communicating on an RS232 basis (PC to paging, M100 S to paging, etc.). The cable supports both 25 and 9-pin D-connectors for connection to serial ports.

### **LBB 7102/87 +/- 12 V DC/DC converter**

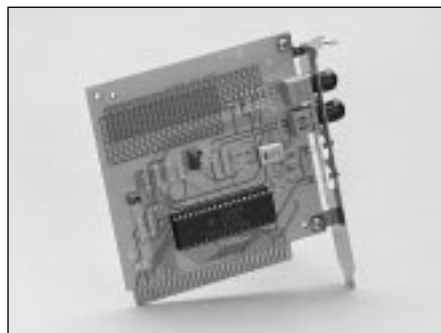
The LBB 7102/87 is used in the SO-72 using the master computer frame when the system is connected to peripheral equipment requiring "true" 12 V swing on the serial interface. Used on a project basis.

### **LBB 7109/23 PC opto interface card, plastic fibre**



The LBB 7109/23 supports an optical interface between a stationary PC and the M100 S exchanges. The card fits into an empty card slot in the PC and caters for one serial optical connection point for short range plastic fibre cable. The connection distance should not exceed 30 meters.

### **LBB 7109/24 PC opto interface card, glass fibre**



The LBB 7109/24 has the similar function as LBB 7109/23 but is equipped with laser transmitters and ST connectors for long-range operation. Typical working distance is 1.5 km without repeaters.

### **LBB 7103/56 ACIA card**

- Is used as opto coupler interface between computer, PC \*, Paging and optional couplers
- One card has two optical fibre connectors for pairs
- Is used in SO (ODIN) exchanges only
- Up to 10 ACIA cards can be mounted in the SO master frame

\* Voice board

**LBB 7II0/08**  
**DTMF coupler, 4 lines \*)**



- Dialling and audio communication to/from M100 S exchanges
- Supports 4 lines
- DTMF format on signalling

**LBB 7II0/09**  
**FSK coupler, 2 lines \*)**



- Dialling and audio communication to/from M100 P exchanges
- Supports 2 lines
- FSK format on signalling

**LBB 7II2/60**  
**DP6000 coupler**



- Supports DP6000 display paging and “meet me”
- Programming of receivers via PC program included in system maintenance PC program

**LBB 7II0/48**  
**DTMF telephone coupler, 2 lines \*)**



- Dialling and audio communication between M100 S exchanges and a local PABX telephone exchange supporting standard DTMF format
- Supports 2 lines

\*) Not CE approved

# Optical Digital Information Network

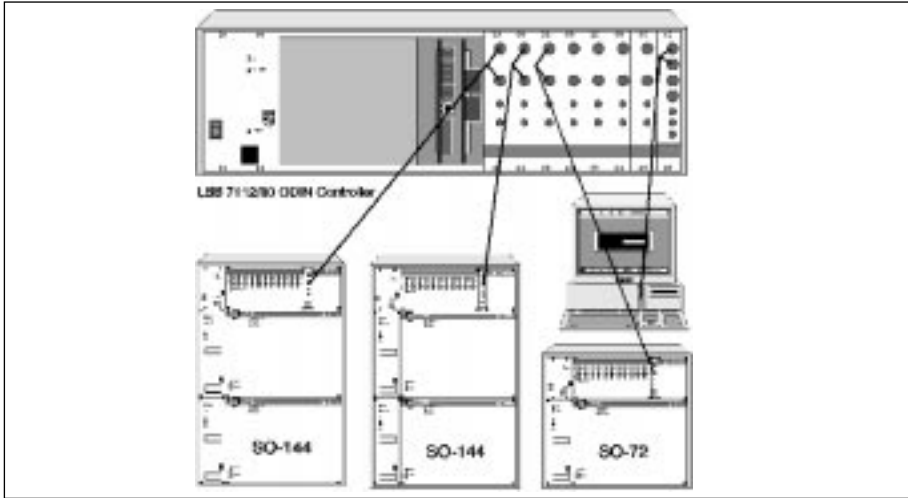
## Optical Digital Information Network (ODIN)

The ODIN system is designed for building intercom systems with capacity for more than 10 000 extensions as well as a distributed exchange structure.

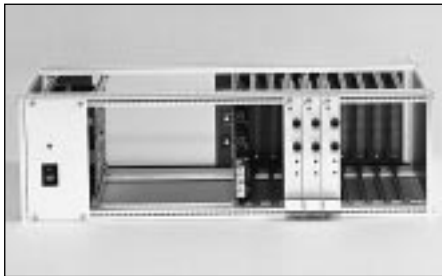
ODIN utilizes distribution of digital audio and data through 2 optical fibres that can be run up to 1.5 km without repeaters.

When several systems are interconnected via ODIN controllers, the entire installation is used as one large system.

- Up to eight M100 SO exchanges of different sizes may be installed at convenient locations to handle the local intercom needs where it is situated and interact with each other via an ODIN network.
- If there is a need for interconnection of more than eight nodes, up to eight ODIN sub-controllers can be used for seven nodes each.  
The sub-controllers are then interconnected via an ODIN controller.
- One or two PCs may be connected to each ODIN PC node or one PC directly to any SO intercom controller for system configuration, maintenance and operation.
- Up to 10 programme channels can be connected to an SO exchange and distributed via the ODIN network to all connected intercom exchanges.



### LBB 7112/80 ODIN controller



The ODIN controller is a passive digital switch for the various types of nodes connected.

**Features:**

- 240 non-blocking channels
- 8 node interface cards
- Cascade coupling for node capacity up to 56 nodes
- To be used also as SUB-HUB in cascade

*Configuration example*

- 1 x LBB 7112/80 ODIN controller
- 3 x LBB 7103/82 Optical data driver, master
- 2 x LBB 7112/12 SO-144 exchange
- 1 x LBB 7112/11 SO-72 exchange
- 1 x LBB 7112/90 ODIN PC node
- 1 x PC
- 1 x LBB 7109/24 PC opto interface card, glass fibre
- 1 x LBB 7103/63 ODIN patch cable, 3 metres
- + Line card, termination equipment, etc. for the exchanges.

Technical data	LBB 7112/80
Supply voltage, strappable:	90-190/180-264 V d.c.
Power consumption from mains, typical/maximum:	90/100 VA
Dimensions in mm/in.:	
Width	447/17.60
Depth	310/12.20
Height	133/5.24
Net weight in kg/lb:	8.1/17.82
Cabinet construction:	Aluminium 19" boxed sub-frame
Mounting:	Rubber feet Optional mounting brackets
Exchange capacities:	
Speech channels	Digitally combined data and speech
Data channels	240 non-blocking
Functional capacity	Supported by ODIN function package
ODIN controller capacity	8 nodes



# Optical Digital Information Network

## **LBB 7112/81** **ODIN SO-72 node**



### *Included in all SO exchanges:*

- Standard Codec capacity divided into:
  - 10 programme channels
  - 1 group call
  - 8 or 16 audio channels
- Expandable to 16 audio channels by adding one LBB 7103/85 PCM codec board, 2-wire

## **LBB 7103/82** **Optical data driver, master**

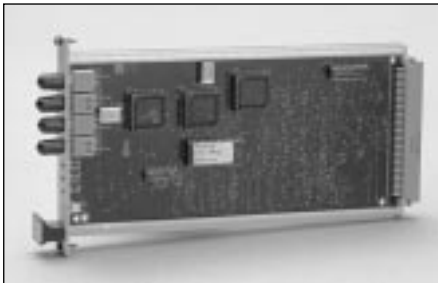


- Drives one ODIN node
- To be installed in the LBB 7112/80 ODIN controller

## **LBB 7103/63** **ODIN patch cable, 3 m**

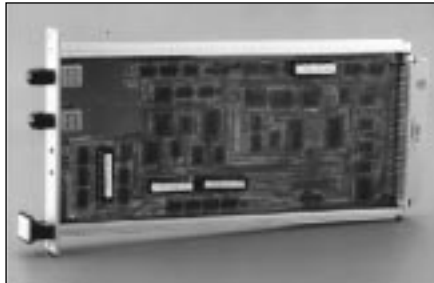
- Duplex fibre optic cable for internal connection between ODIN equipment
- Standard ST connectors  
May be ordered in different lengths

## **LBB 7112/90** **ODIN PC node**



- Supports 1 or 2 PCs in an ODIN network
- Suitable for connection to external PC network with large data capacity
- Card mounted in an ODIN controller in any optical data driver slot
- To be installed in ODIN controller used as a HUB or a SUB-HUB
- To be used for dedicated ODIN applications only (prison, hospital, etc.)

## **LBB 7103/84** **Optical data driver, slave**



- Receiver part of optical data driver, master
- To be installed in the LBB 7112/80 when used in a SUB-HUB configuration

## **LBB 7103/85** **PCM Codec board, 2-wire**

- Analog to digital converter transferring Audio to Pulse Codec modulated signals for transmitting on ODIN

# Exchange Cabinet Configurations

## System cabinets

All exchanges ranging from LBB 7112/04 to /06 and from LBB 7112/14 to /22 are delivered with suitable cabinet 19" racks. The rack sizes are chosen to house an optional fan

module and the racks used for the SO exchanges family have a reserved space for an optional ODIN controller. Exchanges with up to three modules, LBB 7112/00 to /03 and LBB 7112/07

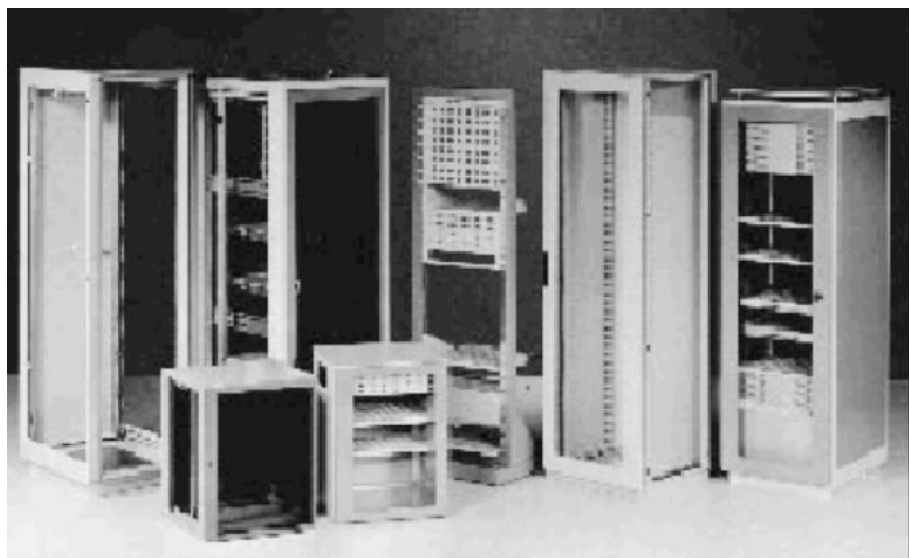
to /13 are housed in EMC proof aluminium cabinets and delivered with brackets for rack mounting. See pages 43 - 49 for standard module configurations in the standard racks.

CABINET RACK		EXCHANGE TYPE LBB 7112/..												
Type	Height	/00	/01	/02	/03	/04	/05	/06	/07	/08	/09			
A1 Cabinet	3U								1					
A1 Cabinet	6U	1	1	2	3				1	1	1			
LBB 7108/10	27U													
LBB 7108/30*	33U													
LBB 7108/40	39U					1	1							
LBB 7108/60	45U							1						
Type	Height	/10	/11	/12	/13	/14	/15	/16	/17	/18	/19	/20	/21	/22
A1 Cabinet	3U	1	1	1	1									
A1 Cabinet	6U		1	2	3									
LBB 7108/10	27U							2						
LBB 7108/30*	33U													
LBB 7108/40	39U					1			2	2	2	2		
LBB 7108/60	45U						1						2	2
* Available on special request only														

## EMC cabinet wrapping

All the 19 inch frames used are designed considering EMC legal requirements. The frames can be equipped with conducting front, back, top and bottom covers in order to reduce radiation. Power supply and function cards used in the M100 S range have also been designed considering EMC requirements.

On a project basis, complete shielding including line termination can be obtained by installing special filtering equipment on the line outputs.



### LBB 7215/22 PC system maintenance program for Windows

The program is made for setting up and changing system parameters for SB-80, S-72 and SO-72 exchanges.  
The program requires one free comport and an OPTO interface card in order to communicate with the exchange.

The PC system maintenance program for Windows will provide maintenance of the following parameters:

- Setup of dialling numbers for intercom stations (Floating numbers)
- Setup of line-related parameters such as station type (Class-of-Service bits)
- Setup of Group call numbers
- Setup of control desk groups \*)
- Setup of direct call for type and numbers
- Setup of tieline connections \*)
- Setup of function display texts
- Setup of executive/secretary pairs
- System initialization \*)
- Set date and time in exchange \*)
- Setup of nodes and system parameters
- Send and receive exchange data test
- Setup and communication between PC and exchange
- Setup of call restrictions \*)
- Setup of transfer and group hunt \*)
- Clear of system tables
- Save and retrieve of all data in one Sysmain database
- Print of pre-defined reports
- Setup of pre-defined conference groups in M100 SB-80

\*) Not applicable for M100 SB-80

### Machine Requirements

- PC 486 with a minimum of 8 Mb memory
- Windows V.3.11 or higher
- 1.44 Mb floppy disk drive (A-drive)
- Hard disk (C-drive), min. 6 Mb available space
- The PC must have a free serial port (COM-port)

M100 S and M100 SO (ODIN) use a special protocol based on the Xmodem protocol for communication between configuration PC and exchange.

The program will search for work files on loading the program. Initially the work files are empty.

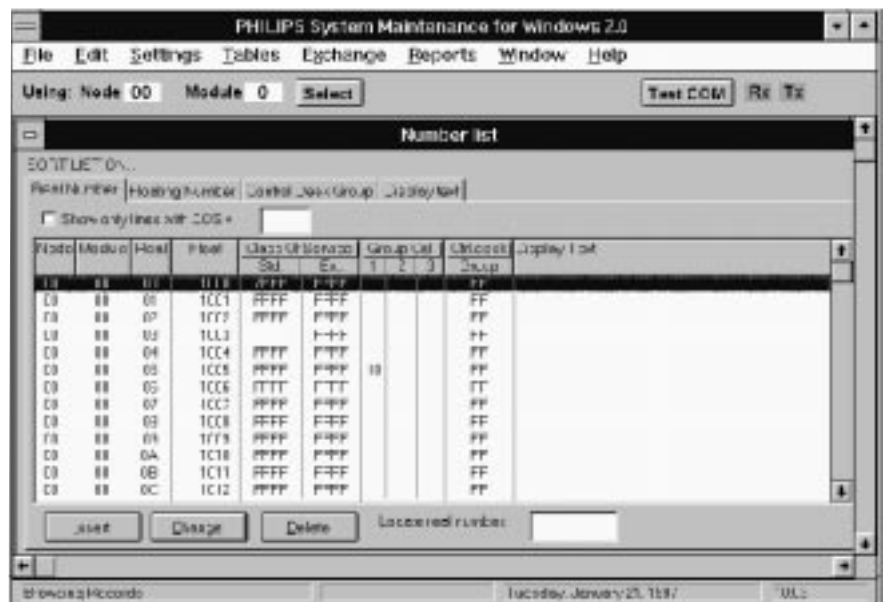
Changes in the tables are updated in the work files automatically, i.e. you may leave the program without saving.

When loading the program it will read the data from the work files you were working on last.

The window shown below is the main window with pull-down menus.

Information on selected node and module test button for communication and a status bar with time and date and dynamic information field is shown.

The example shows a selected number list table. A help file will guide you through the program.



# Description

## LBB 7215/13

### Basic call monitor program



The LBB 7215/13 is necessary to display station call activity in the M100 S stand-alone and in ODIN configurations as text strings on the PC screen.

The program is designed to work on IBM-compatible PC 386 SX or better with minimum 40 Mb hard disk capacity available.

#### Features:

- Display of calls A to B
- Display of call requests
- Pre-programmed call patterns can be initiated from the PC manually or as a result of the exchange activity
- Text related to each call can be edited to any language

Typical application areas are security installations.

## LBB 7215/30

### PC Nurse call program



The PC nurse call program is designed to work as an interface to the Philips DP6000 paging system and other paging systems using the ESPA 444 communication protocol.

The program runs 24 hours a day as a part of the complete nurse call system.

The PC nurse call program offers the following main features:

- Communication protocol conversion between the Intercom system and the Paging system
- Programming of up to 9 shifts per ward
- Programming of up to 9 wards
- Programming of paging receivers corresponding to each patient bed
- Programming of paging receivers' bleep codes corresponding to 9 different call types (call, assistance, alarm, etc.)
- Programming of automatic time-outs per call type
- Logging of every nurse call in the system
- Logging of errors on the PC communication ports
- Activation of central potential-free contact for error indication
- Printer driver for all tables programmed
- Free programming of all screen texts in any language

## Programming

The PC nurse call program contains a database which holds all relevant data in order to activate the defined paging receiver upon a patient call. The database may be edited and stored on the hard disk as well as printed as hard copy for filing purposes. Editing is performed via pull-down menus for simple navigation and use.

All levels in the programming process are protected by individual user name and passwords in order to obtain maximum security. The user name and password may be edited by the system operator at any time.

Programming and editing of tables may be executed during normal operation of the program except the exact moment a nurse call is going through the system. The operator is warned by a screen message in this short period.

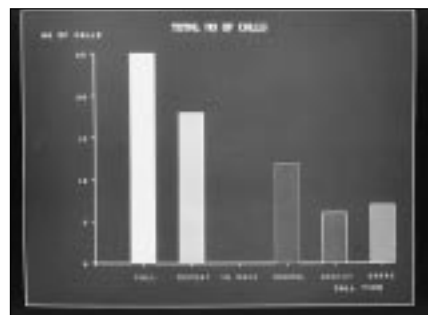
## Logging

All nurse calls and errors occurring in the nurse call system are logged on the hard disk of the nurse call PC.

The program makes one LOGFILE for each day.

The logged data may be used for presenting statistics for the total nurse call system, or broken down to floor, ward and specific calls at certain time-frames of the day.

Print-outs may be used to create hard copies for filing, etc.





The Philips Bi-Way intercom system is designed for efficient handsfree loudspeaking communication between counter personnel and the public through security glass or glass partitions.

Security glass and specially built counters provide protection from violence and vandalism as well as noise and health problems for those handling money or working in restricted areas.

The Bi-Way system enables counter personnel to give their customers personal service while maintaining security and hygiene.

The Philips Bi-Way system is designed to cater for one-to-one intercom communication between two parties.

Typical applications are banking counters, post office counters, railway ticket counters, gates as well as applications in hospital environments where one-to-one communication is required.

A number of applications are supported through the flexible and universal design.

The operator's unit may be placed on the desk or integrated as a part of an operator console through the optional flush mount frame.

The operator has the choice of microphones; handsfree communication through the built-in microphone, an optional gooseneck microphone installed on the operator's unit for extreme noise conditions or, as an alternative, an external microphone as well as a headset with microphone.



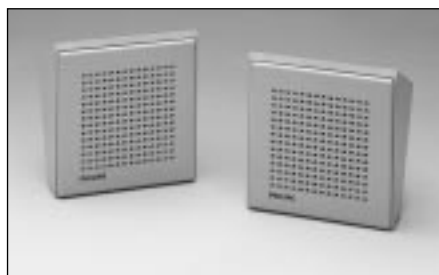
## LBB 7026/65 Bi-Way starter kit



*LBB 7026/65 Bi-Way starter kit consists of:*

- LBB 7026/60 Bi-Way operator's unit
- LBB 7026/70 Bi-Way microphone kit
- LBB 7026/80 Bi-Way loudspeaker kit
- LBB 7102/60 Power supply

## LBB 7026/80 Bi-Way loudspeaker kit



2 loudspeaker cabinets with self-adhesive tape. 1 alco-pad for cleaning screen.  
10 m flexible loudspeaker cable.

*Dimensions (one cabinet) in mm/inch:*  
105x106x72/4.1x4.2x2.8

*Weight (two cabinets) in kg/lb:*  
0.37 net/0.8

*Cabinet:* ABS plastic, silver brown

*Loudspeaker type:* Philips AD 3071/Y50

*Impedance:* 50 ohm

*Power capacity:* max. 2 W

*Resonant frequency:* 250 Hz

## LBB 7102/60 Power supply



Mains power supply for up to five Bi-Way positions

*Dimensions (wxhxd) in mm/inch:*  
100x51x63/3.9x2x2.5 without plug

*Input voltage:*  
230 V a.c. +6/-10 %, 50/60 Hz

*Standard output voltage range:*  
Standard 12 V d.c., (5-15 V d.c.)

*Max. output power:* 8 W

*Protection:*

Thermal fuse in transformer and thermal protection in regulator  
The unit is double insulated

## LBB 7026/70 Bi-Way microphone kit



Electret microphone with 5 m cable.  
Plastic microphone housing. 2 aluminium lists with self-adhesive tape. 1 alco-pad for cleaning screen.

*Dimensions (wxhxd):*

- Microphone housing in mm/inch:  
18x9.5x13/0.7x0.4x0.5

- Aluminium lists (lxhxd) in mm/inch:  
1000x10x6/39.4x0.4x0.2

*Electret microphone:* PRIMO EM76

*Sensitivity (1 kHz/3 V):*  
0.7 mV, +/- 3 dB/74 dB

## LBB 7026/60 Bi-Way operator's unit



For desktop, flush mount or on wall mounting.

*Dimensions (wxhxd) in mm/inch:*  
93x65x224/3.7x2.6x8.8

*Weight, net in kg/lb:* 0.350/0.8

*Environmental cond., category:* T1

*Supply voltage:* 12 V d.c.

*Current consumption, (max./min.):*  
180/42 mA

*Output power, public side:* 500 mW peak

*Output power, Operator's unit:*  
350 mW peak

## Optional accessories

### LBB 7073/82 Handset with cradle kit



Optional handset for wall mounting in difficult noise conditions or for situations where confidentiality is required.

### LBB 7026/81 Bi-Way flush mount loudspeaker kit



Optional loudspeakers for flush mount applications in desk or wall.  
*Height/diameter in mm/inch:* 58x160/2.3x6.3  
*Weight in kg/lb:* 0.700/1.5  
*Frequency range:* 130-15000 Hz  
*Power:* 6 W  
*Impedance:* 20 ohm

### LBB 7026/71 Bi-Way goose-neck microphone



Optional directional microphone for extreme noise conditions.  
*Height/diameter in mm/inch:* 320x12/12.6x0.5  
*Weight in kg/lb:* 130/0.3  
*Frequency range:* 100-10000 Hz  
*Sensitivity:* 7.2 mV/Pa, +/- 3 dB  
*Impedance:* 1000 ohms, +/- 40%

### LBB 7026/82 Bi-Way hearing aid kit



Hearing aid loop antenna and amplifier. To be used with 230 V/12 V a.c. 8 W power supply with Euro-connector, LBB 7102/63 or 240 V/12 V a.c. 8 W power supply with UK-connector, LBB 7102/64.

### LBB 7026/72 Bi-Way external microphone



Optional microphone for connection to the operator's unit to improve flexibility.

### LBB 7073/70 Flush mount frame



Flush mount frame for operator's unit for desk or wall.  
*Dimensions (wxbxd) in mm/inch:* 130x265x18/5.1x10.4x0.7  
*Cut-out hole in mm/inch:* 107x231x63/4.2x9.1x2.5

### LBB 7026/83 Bi-Way headset



Headset with microphone for connecting to the Bi-Way operator's unit

### LBB 7102/63 Power supply 12 V, Euro-connector



230 V/12 V a.c. 8 W power supply with Euro-connector.

### LBB 7102/64 Power supply 12 V, UK-connector



240 V/12 V a.c. 8 W power supply with UK-connector.



# Standard Requirement Specification

	T 1	T 2	T 3	T 4	T 5	E
Standard requirement specifications - SRS Intercom & Nurse Call	Indoors in office & light industrial environments	Indoors in light industrial & hospital environments	Indoors in heavy duty industrial environments	Normal outdoor environments such as gates, doors, etc.	Heavy duty outdoor environments with special requirements	Indoors in climate-controlled offices and light industrial environments
<b>1. Mains supply when applicable</b>						
90-190 V a.c. 47-63 Hz	NA	NA	NA	NA	NA	X
180-264 V a.c. 47-63 Hz	NA	NA	NA	NA	NA	X
<b>2. Environmental data, operating</b>						
2.1 Ambient temperature range (°C):						
-25/+55				X	X	
0/+45	X	X	X			X
2.2 Relative humidity (%):						
30-80, non-condensing						X
10-95	X	X	X	X	X	
<b>3. Miscellaneous</b>						
3.1 Min. lifetime, installed 10 years	X	X	X	X	X	X
3.2 Max. storage time, 2 years	X	X	X	X	X	X
3.3 Reliability, MTBF						
3.3.1 5 years					X	X
3.3.2 20 years	X	X	X	X		
3.4 Service (facilities for repair of sub-units):						
3.4.1 Local (NSO/installer)	X	X	X	X	X	X
3.4.2 Central (supply centre)						X
3.5 Service period 5 years	X	X	X	X	X	X
3.6 Accepted level at delivery, non funct. device, 1,0%	X	X	X	X	X	X

NA = not applicable

# IP Degree of Protection

Protection for electrical apparatus against physical contact, foreign bodies and ingress of water. The degree of protection is stipulated by using the abbreviation IP (international protection) and two identification numbers according to the following table.

## Degree of protection (Protection against contact and ingress of solid foreign bodies)

- |   |   |
|---|---|
| 0 | No special protection.  |
| 1 | Protection against ingress of solid objects with a diameter of more than 50 mm (large foreign bodies). 1)<br>No protection against deliberate access, for example with a hand, but large surfaces of the body are prevented from approach.                      |
| 2 | Protection against penetration by solid objects with a diameter of more than 12 mm (medium-size objects). 1)  |
| 3 | Protection against ingress of solid objects with a diameter of more than 2.5 mm (small foreign bodies). 1) 2)<br>Tools, wires, etc., with a thickness of more than 2.5 mm are prevented from approach.  |
| 4 | Protection against ingress of solid objects with a diameter of more than 1 mm (granular objects). 1) 2)<br>Tools, wires, etc., of thickness greater than 1 mm are prevented from approach.  |
| 5 | Protection against harmful dust deposits. Ingress of dust is not totally prevented but the dust must not enter in sufficient quantity as to interfere with satisfactory operation of the equipment (dust protected). 3)<br>Complete protection against contact. |
| 6 | Protection against ingress of dust (dust-tight).<br>Complete protection against contact.  |

- 1) In the case of equipment with a degree of protection from 1 to 4, uniformly or non-uniformly shaped foreign bodies with three mutually perpendicular dimensions greater than the numerical values given for the diameter are prevented from ingress.
- 2) For degree of protection 3 and 4, the application of this table for equipment containing drainage holes or ventilation openings is the responsibility of the relevant technical committee.
- 3) For degree of protection 5, the application of this table for equipment containing drainage holes is the responsibility of the relevant technical committee.

## Degree of protection (Protection against ingress of water)

- |   |   |
|---|---|
| 0 | No special protection.  |
| 1 | Protection against dripping water at an angle.<br>No harmful effect must be produced (vertically falling drops).  |
| 2 | Protection against dripping water falling vertically.<br>There must be no harmful effect when the equipment (enclosure) is tilted at an angle up to 15° from its normal position (drops falling at an angle). |
| 3 | Protection against water falling at any angle up to 60° from the vertical.<br>There must be no harmful effect (spray water).  |
| 4 | Protection against water splashed against the equipment (enclosure) from any direction.<br>There must be no harmful effect (splashing water).   |
| 5 | Protection against water projected from a nozzle against the equipment (enclosure) from any direction.<br>There must be no harmful effect (water jet).  |
| 6 | Protection against heavy seas or powerful water jets.<br>Water must not enter the equipment (enclosure) in harmful quantities (splashing over).   |
| 7 | Protection against water when the equipment (enclosure) is immersed in water under defined conditions of pressure and time.<br>Water must not enter in harmful quantities (immersion).                        |
| 8 | The equipment (enclosure) is suitable for continuous submersion in water under conditions which must be specified by the manufacturer (submersion). 1)  |

- 1) This degree of protection normally means that the equipment is hermetically sealed. However, with certain types of equipment it can mean that water may enter, provided it produces no harmful effects.

# Typenumber Survey

<i>Typenumber</i>	<i>Description</i>	<i>Page</i>	<i>Typenumber</i>	<i>Description</i>	<i>Page</i>
LBB 7026/60	Bi-Way operator's unit . . . . .	.63	LBB 7077/26	PAN lamp terminal, dual . . . . .	.28
LBB 7026/65	Bi-Way starter kit . . . . .	.63	LBB 7077/30	Patient remote control . . . . .	.26
LBB 7026/70	Bi-Way microphone kit . . . . .	.63	LBB 7077/31	Patient remote audio . . . . .	.26
LBB 7026/71	Bi-Way gooseneck microphone . . . . .	.64	LBB 7077/32	Patient remote audio & TV . . . . .	.26
LBB 7026/72	Bi-Way external microphone . . . . .	.64	LBB 7077/33	Patient remote call & light . . . . .	.26
LBB 7026/80	Bi-Way loudspeaker kit . . . . .	.63	LBB 7077/35	Pull-cord terminal . . . . .	.26
LBB 7026/81	Bi-Way flush-mount loudspeaker kit . . . . .	.64	LBB 7077/36	Cradle for remote control . . . . .	.25
LBB 7026/82	Bi-Way hearing aid kit . . . . .	.64	LBB 7077/40	Presence, assistance & alarm terminal . . . . .	.26
LBB 7026/83	Bi-Way headset . . . . .	.64	LBB 7077/41	Presence & assistance terminal . . . . .	.26
LBB 7069/08	Wall socket, 6 pole, 10 pack . . . . .	.19	LBB 7077/42	Precence terminal . . . . .	.27
LBB 7069/18	6-pole plug, male 10 pack . . . . .	.19	LBB 7077/43	Precence & alarm terminal . . . . .	.27
LBB 7069/21	Wall socket, snap in, 4-pole 10 pack . . . . .	.19	LBB 7077/44	Call button terminal . . . . .	.27
LBB 7069/62	Station cord, snap-in connector 10 pack . . . . .	.19	LBB 7077/45	Patient remote terminal . . . . .	.27
LBB 7069/63	Station cord, 6-pole connector 10 pack . . . . .	.19	LBB 7077/50	Dual external alarm terminal . . . . .	.27
LBB 7069/64	Station cord interconn, 4-pole 10 pack . . . . .	.19	LBB 7077/51	Alarm terminal - heavy duty . . . . .	.27
LBB 7071/10	Flame-proof loudspeaker horn, 8 W/8 Ohm . . . . .	.12	LBB 7077/70	Cord saver - RJ45 . . . . .	.25
LBB 7071/71	Heavy duty handset kit . . . . .	.18	LBB 7077/71	PAN TV interface . . . . .	.26
LBB 7072/10	Master station kit . . . . .	.15	LBB 7089/10	Desktop master station . . . . .	.5
LBB 7072/32	Single/Dual call station kit . . . . .	.15	LBB 7089/15	Compact master station . . . . .	.5
LBB 7073/60	On wall back box . . . . .	.18	LBB 7089/16	Compact master display station . . . . .	.6
LBB 7073/61	Flush mount back box, 60 mm . . . . .	.18	LBB 7089/18	Compact master display station w/back light . . . . .	.6
LBB 7073/62	On wall back box, plastic . . . . .	.19	LBB 7089/20	Industrial master station . . . . .	.8
LBB 7073/63	Flush mount back box, 75 mm . . . . .	.19, 28	LBB 7089/21	Industrial single call station . . . . .	.9
LBB 7073/65	Audio/Relay kit . . . . .	.16	LBB 7089/22	Industrial dual call station . . . . .	.9
LBB 7073/66	Audio kit . . . . .	.16	LBB 7089/24	Industrial call stn. 4 button . . . . .	.9
LBB 7073/67	Relay kit . . . . .	.17	LBB 7089/26	Industrial call stn. 6 button . . . . .	.9
LBB 7073/68	Application kit . . . . .	.17	LBB 7089/28	Emergency station w/key release . . . . .	.13
LBB 7073/70	Flush mount frame . . . . .	.18, 64	LBB 7089/30	Industrial master display station w/back light . . . . .	.8
LBB 7073/71	Flush mount frame, white . . . . .	.28	LBB 7089/31	Single call station . . . . .	.7
LBB 7073/73	Weather protection frame . . . . .	.18	LBB 7089/32	Dual call station . . . . .	.7
LBB 7073/74	Outdoor station heating kit . . . . .	.19	LBB 7089/40	Heavy duty master station . . . . .	.10
LBB 7073/80	Desktop handset kit . . . . .	.18	LBB 7089/41	Heavy duty single call station . . . . .	.11
LBB 7073/82	Handset with cradle kit . . . . .	.18, 64	LBB 7089/42	Heavy duty dual call station . . . . .	.11
LBB 7073/84	Cradle bracket . . . . .	.18	LBB 7089/50	Explosion-proof master station IIC . . . . .	.12
LBB 7076/26	Red lamp terminal glass . . . . .	.29	LBB 7089/52	Explosion-proof dual call station IIC . . . . .	.12
LBB 7076/27	Green lamp terminal glass . . . . .	.29	LBB 7089/96	Chemical resistant master station . . . . .	.13
LBB 7076/28	White lamp terminal glass . . . . .	.29	LBB 7089/97	Programme distribution station . . . . .	.13
LBB 7076/29	Yellow lamp terminal glass . . . . .	.29	LBB 7095/01	Power supply 24 V/40 W - Euro connector . . . . .	.19
LBB 7076/37	Blue lamp terminal glass . . . . .	.29	LBB 7102/18	S-16 power supply 36 V/1,7 A - EMC . . . . .	.36
LBB 7076/60	Terminal cover plate . . . . .	.28	LBB 7102/60	Power supply 12 V/8 W . . . . .	.63
LBB 7076/61	Terminal housing, single . . . . .	.28	LBB 7102/63	Power supply 12 V, Euro-connector . . . . .	.64
LBB 7076/62	Terminal housing, dual . . . . .	.28	LBB 7102/64	Power supply 12 V, UK-connector . . . . .	.64
LBB 7076/63	Terminal housing, triple . . . . .	.28	LBB 7102/87	+/- 12 V DC/DC converter . . . . .	.54
LBB 7076/75	Bi-stable control relay . . . . .	.28	LBB 7103/48	MK II Voice board . . . . .	.53
LBB 7077/00	PAN controller plug-in board . . . . .	.24	LBB 7103/56	ACIA card . . . . .	.54
LBB 7077/10	Bedside station . . . . .	.24	LBB 7103/61	OPTO cable, 4 m . . . . .	.54
LBB 7077/20	Dual lamp terminal, 4-wire . . . . .	.29	LBB 7103/62	Serial interface cable, 4 m . . . . .	.54
LBB 7077/21	Dual lamp terminal, 4-wire with buzzer . . . . .	.29	LBB 7103/63	ODIN Patch cable, 3 m . . . . .	.57
LBB 7077/22	Triple lamp terminal, 4-wire . . . . .	.29	LBB 7103/82	Optical data driver, master . . . . .	.57
LBB 7077/25	PAN lamp terminal, single . . . . .	.28			

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<i>Typenumber</i>	<i>Description</i>	<i>Page</i>	<i>Typenumber</i>	<i>Description</i>	<i>Page</i>
LBB 7103/84	Optical data driver, slave . . . . .	.57	LBB 7112/17	SO-448 Exchange . . . . .	.48
LBB 7103/85	PCM codec board, 2-wire . . . . .	.57	LBB 7112/18	SO-512 Exchange . . . . .	.48
LBB 7105/95	Line termination unit . . . . .	.53	LBB 7112/19	SO-576 Exchange . . . . .	.48
LBB 7105/97	Line termination cable, 16 lines . . . . .	.53	LBB 7112/20	SO-640 Exchange . . . . .	.49
LBB 7105/98	Line termination panel . . . . .	.53	LBB 7112/21	SO-704 Exchange . . . . .	.49
LBB 7108/10	Cabinet 27U . . . . .	.58	LBB 7112/22	SO-768 Exchange . . . . .	.49
LBB 7108/30	Cabinet 33U . . . . .	.58	LBB 7112/30	SB-80/S-72 Function upgrade kit . . . . .	.51
LBB 7108/40	Cabinet 39U . . . . .	.58	LBB 7112/31	SB-80/SO-72 ODIN function upgrade kit . . . . .	.51
LBB 7108/60	Cabinet 45U . . . . .	.58	LBB 7112/32	S-72/SO-72 ODIN function upgrade kit . . . . .	.52
LBB 7109/21	VDU terminal opto interface . . . . .	.54	LBB 7112/33	S-216/S-256 Stand-alone exchange expansion kit . . . . .	.52
LBB 7109/23	PC opto interface card, plastic fibre . . . . .	.54	LBB 7112/34	SO-320/SO-384 ODIN exchange expansion kit . . . . .	.52
LBB 7109/24	PC opto interface card, glass fibre . . . . .	.54	LBB 7112/60	DP6000 paging coupler . . . . .	.55
LBB 7109/26	S-80 programming kit . . . . .	.43	LBB 7112/80	ODIN Controller . . . . .	.56
LBB 7110/08	DTMF coupler, 4 lines . . . . .	.55	LBB 7112/81	ODIN SO-72 Node . . . . .	.57
LBB 7110/09	FSK coupler, 2 lines . . . . .	.55	LBB 7112/90	ODIN PC Node . . . . .	.57
LBB 7110/29	Line card for 6 stations/2simplex relay loudspeakers . . . . .	.53	LBB 7201/01	S-16 function package . . . . .	.41
LBB 7110/30	Line card, 8 stations 10 programmes . . . . .	.53	LBB 7201/10	S-16 13 subs/2 masters program . . . . .	.37
LBB 7110/39	Line card 10 programmes 6 stations/ 2 coupler lines . . . . .	.53	LBB 7201/11	S-16 8 subs/2 masters program . . . . .	.37
LBB 7110/40	Line card, 8 simplex relay loudspeakers . . . . .	.53	LBB 7201/12	S-16 10 subs/2 masters display program . . . . .	.37
LBB 7110/45	Line card, 8 stations 10 programme channels/open line check . . . . .	.53	LBB 7201/30	S-16 PC patch program . . . . .	.37
LBB 7110/47	Line card for 6 stations/2 coupler lines/open line check . . . . .	.53	LBB 7215/13	Basic call monitor program . . . . .	.60
LBB 7110/48	DTMF Telephone coupler, 2 lines . . . . .	.55	LBB 7215/22	PC System maintenance program for Windows . . . . .	.59
LBB 7111/00	S-16 Basic exchange . . . . .	.34	LBB 7215/30	PC Nurse call program . . . . .	.60
LBB 7111/16	S-16 Start pack compl. w/3 stations . . . . .	.35	LBB 7216/11	SB-80 Basic function package . . . . .	.41
LBB 7111/17	S-16 Start pack compl. w/8 stations . . . . .	.35	LBB 7216/22	Single node function package - 6 digit . . . . .	.41
LBB 7111/18	S-16 Start pack w/3 stations snap-in . . . . .	.35	LBB 7216/82	ODIN function package . . . . .	.41
LBB 7111/19	S-16 Start pack display w/3 stations snap-in . . . . .	.35	LBB 7999/35	M100 S P.A. coupler . . . . .	.16
LBB 7111/20	S-16 Line card for 2 stations . . . . .	.36	LBC 3490/10	Loudspeaker horn, 16 ohm . . . . .	.10
LBB 7111/22	S-16 Line card 1 station/1 loudspeaker . . . . .	.36			
LBB 7111/32	S-16 Power distribution board . . . . .	.36			
LBB 7111/50	Interconnection kit two S-16 exchanges . . . . .	.36			
LBB 7111/51	S-16 Display driver kit . . . . .	.36			
LBB 7112/00	SB-80 Exchange . . . . .	.43			
LBB 7112/01	S-72 Exchange . . . . .	.44			
LBB 7112/02	S-144 Exchange . . . . .	.44			
LBB 7112/03	S-216 Exchange . . . . .	.44			
LBB 7112/04	S-256 Exchange . . . . .	.45			
LBB 7112/05	S-320 Exchange . . . . .	.45			
LBB 7112/06	S-384 Exchange . . . . .	.45			
LBB 7112/08	S-72 Sub Exchange . . . . .	.51			
LBB 7112/09	S-64 Sub Exchange . . . . .	.51			
LBB 7112/11	SO-72 Exchange . . . . .	.46			
LBB 7112/12	SO-144 Exchange . . . . .	.46			
LBB 7112/13	SO-216 Exchange . . . . .	.46			
LBB 7112/14	SO-256 Exchange . . . . .	.47			
LBB 7112/15	SO-320 Exchange . . . . .	.47			
LBB 7112/16	SO-384 Exchange . . . . .	.47			





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